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REPORT

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en Lake Superior and the Red River Settle-
t.

John Lovell, Toronto.
1858

24-14

REPORT

ON THE

EXPLORATION OF THE COUNTRY

BETWEEN

Lake Superior and the Red River Settlement.

PRINTED BY ORDER OF THE LEGISLATIVE ASSEMBLY.

TORONTO:
JOHN LOVELL, PRINTER, CORNER OF YONGE AND MELINDA STREETS.
1858.

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RETURN

To AN ADDRESS from the Legislative Assembly to His Excellency the Governor General, dated the 19th instant, praying His Excellency to cause to be laid before the House "copies of all Instructions given "by any Departments of the Provincial Government to any person or persons employed in the "exploration of the country between Lake Superior "and the Red River—of all Communications in "reference to the organization of the exploring "party or parties engaged in that service, and of "all Reports, &c., received by the Government, or "any Department thereof in relation thereto."

By command,

T. J. J. LORANGER,
Secretary.

Secretary's Office,
Toronto, 10th May, 1858.

MEMORANDUM.

The original Maps and Plans referred to in the paper herewith, are deposited in the Provincial Secretary's Office.

A copy of the Plan mentioned in Mr. Dawson's report of the 15th March last accompanies the papers.

E. A. MEREDITH,
Assistant Secretary.

Secretary's Office,
Toronto, 10th May, 1858.

INSTRUCTIONS AND COMMUNICATIONS.

SECRETARY'S OFFICE,
Toronto, 22nd July, 1857.

SIR,—I have the honor to acquaint you that, confiding in your integrity, judgment and energy, together with your acquaintance with the Red River Territory, your knowledge of the communication with that country, and with the tribes of Indians which traverse it, His Excellency the Administrator of the Government has been pleased to appoint you to the chief direction and control of the party about to be sent there.

The party organized consists of the following:

Mr. Gladman, chief director and controller of the expedition, and his assistant.

Professor Hind, Geologist and Naturalist, and his assistant.

Mr. Napier, Engineer, with his assistant and staff-men; and Mr. Dawson, Surveyor, with his assistants, and chain-men.

Also, such voyageurs or canoe-men as in your judgment may be necessary; the probable number of canoes being assumed at four, with four voyageurs in each; such men to be selected with a view to their being capable of assisting the engineering and surveying branches of the expedition, as axe-men, &c., when required.

The primary object of the expedition is to make a thorough examination of the tract of country between Lake Superior and Red River. By which may be determined the best route for opening a facile communication through British territory, from that lake to the Red River Settlements, and ultimately to the great tracts of cultivable land beyond them. With this view, the following suggestions are offered for your guidance, so far as you will find them practicable, and supported by the topography.

In the first place, after being landed at Fort William, to proceed by the present Hudson's Bay Canal route—by the Kaministiquia River, Dog Lake, Lake of the Thousand Islands, &c., to Lac La Croix, and thence by Rainy Lake, Lake of the Woods, Winipeg River to Lake Winipeg, and up the Red River to Fort Garry;

From Rainy Lake to Lake Winipeg, the route as at present affords a good navigation for boats of considerable size, with the interruption however of some short portages: but from Rainy Lake eastward to Lake Superior, the route is very much interrupted, and rendered laborious, tedious and expensive, by the great number of portages, some of considerable length, which have to be encountered to avoid the falls and rapids in the ravines and creeks which this route follows.

For the establishment of a suitable communication for the important objects aimed at, it is believed that the construction of a road throughout, from some point on Lake Superior, probably either at Fort William, or at or near the mouth of the Pigeon River to Rainy Lake, must be undertaken. To ascertain, therefore, at present, by general exploration, what the route for this road should be, whether in the vicinity of the Hudson's Bay route, or by the line of country in which lies the chain of waters from Rainy Lake to the mouth of Pigeon River, this question can obviously be only satisfactorily determined, by the difficult portions of both being tested instrumentally, but in either case, as the construction of such road would be a matter of time and much expense, it is considered necessary that the portages, &c., of either of the routes above described should be improved, so as to be made more available and facile, and to be auxiliary to the works of the road by facilitating the transport of men, supplies, &c.

To determine, therefore, the portages to be improved, and the best mode of doing so, and whether the present reaches of canoe or boat navigation may not be further extended by the removal of shoals or the erection of dams, will be points to which you will direct the attention of the engineering and surveying branches of your party.

From Rainy Lake by Lake of the Woods, and Lake Winipeg to Fort Garry, as before described, is now comparatively a good water communication, but very circuitous; and should the character of Rat River, which rises at no great distance from the Lake of the Woods, and falls into the Red River above Fort Garry, be found susceptible of its being made a boat channel, a saving probably of 150 miles in length might be effected; or on an exploration of the country through which that river flows, it may be found more desirable to construct a road along it from Red River, and should this be so, the nature of the communication between Red River and Lake Superior, eventually would be about 100 miles of road from Red River to Lake of the Woods, thence about 140 miles of water communication to the eastern end of Rainy Lake, and from that point a continuous road to Lake Superior of from 160 to 200 miles in length.

When you shall have reached Rainy Lake by the Hudson's Bay canoe or northern route, it is left to your discretion whether you should or not leave the engineering party with sufficient force to return and explore back to Lake Superior the Southern or Pigeon River route, while you proceed with the surveying party by Lake Winnipeg to Red River, and return by Rat River·

All the members of the party, with the exception of the Geologist and his assistant, are, it is understood, to winter on the expedition if required. The expediency of adopting that course can only be determined by you some time hence; but should you decide upon so doing, you will of course take due precautions for the safety and comfort of the party, and for their effective and profitable employment.

As director and leader of the party, you will govern all matters whatsoever connected with the conducting and provisioning of it—the hiring, discharging and payment of men. The lines to be explored, and the water examinations to be made will be determined by you, on consultation with the gentlemen conducting the engineering and surveying branches. You will also decide the times and places for separating the party or parties and for their re-union, the Engineer and Surveyor have been instructed to afford you all the assistance in their power, and have been informed that they are to consider themselves under your guidance and direction. Any occasional additional assistance they may require will be obtained through you, as well as all necessaries whatever; but the conducting of their immediate professional duties will, of course, be regulated by themselves.

At the very outset, it is important that you should regulate the number of fire-arms that you may consider it necessary to take, which it is believed should not exceed six,—one with the Director, one with the Geologist, two with the Engineer, and two with the Surveyor. You will adopt, also, full precautions against any spirits, &c., of any description being carried, except what shall be under your own sole charge and control, and such as you may consider it necessary to have in case of illness.

With regard to the procuring of canoes, camp equipage, medicine, &c. &c., for the expedition, it is not considered necessary, from your experience in such matters, to offer any suggestions further than to draw your attention to some Crimean rations of pressed vegetables, now in the commissariat store, which occupy but little space, and a small portion of which makes in a short time excellent soup.

In order further to give effect to your control and authority, a commission of magistracy will be conferred upon you.

About the time of your reaching Rainy Lake, or at such period as you may deem proper, you will send a messenger with despatches, reporting upon your progress, &c. &c., and whether you find it necessary or desirable to winter in the territory, &c.

Finally you will impress upon each member of your party that no communication or information whatsoever, with regard to the progress or results of the expedition, are to be transmitted, by writing or otherwise, except to the Honorable Provincial Secretary.

The *ad interim* reports of the Geologist, Engineer, and Surveyor, you will inclose with your own, and transmit by the messenger above adverted to.

You will also peremptorily require that the weight of all personal effects taken by each of the party, including that of the bag or leather valise containing them, shall not exceed ninety pounds.

(Signed,) E. PARENT,
Assistant Provincial Secretary.

George Gladman, Esquire,
Port Hope, U. C.

CROWN LANDS DEPARTMENT,
Toronto, 14th July, 1857.

SIR,—The Government having determined upon sending out an expedition under G. Gladman, Esquire, to explore the country lying between the head of Lake Superior and the Red River Settlement, I am directed by the Honorable the Commissioner, to request that you will inform him whether you are prepared to take charge of one of the parties under that gentleman; if so, you will please to repair to Toronto, with as little delay as possible, there to await further instructions from this department.

I have, &c.,
(Signed,) E. A. GENEREUX.

S. J. Dawson, Esquire,
Three Rivers, C. E.

INSTRUCTIONS to S. J. Dawson, Esquire, to assist in the exploration of the country between the head of Lake Superior and the Red River Settlement.

SIR,—The Government having determined upon sending out an expedition under George Gladman, Esquire, to explore the above mentioned country, you have been selected to act as surveyor. You will therefore put yourself in communication with that gentleman, who, as chief of the expedition, will have the general direction thereof; but who will not interfere with the professional working of your party.

As the rate of progress of the expedition will be too rapid for an accurate instrumental survey of the whole of the route, you

you will make such a *reconnaissance* of those portions thereof which present no engineering difficulties, as the time and circumstances will permit, ascertaining the bearings by a prismatic compass, and estimating the distances on land by pacing; and on the lakes and rivers by the rate of progress of your canoe, or by a Rochon's micrometer, when you have leisure and opportunity of using it, but making an accurate survey where such difficulties occur.

You will note the kind and quality of the soil and its fitness for agriculture; the kinds of timber and their commercial value; the general nature of the face of the country, whether level, rolling, broken, hilly or mountainous; the marshes, swamps and meadows; the lakes with a description of their banks, and whether their waters are deep or shallow, pure or stagnant; the courses, widths and depths of the streams, with their rapids and falls, estimating the difference of level where an instrumental survey is not required; the kind and localities of the fixed rocks, of which you will collect small specimens (from one to two cubic inches), attaching a number to each, and wrapping it up in birch or cedar bark, or such other suitable materials as are to be had on the spot, noting the number and locality in your field book, and the dip and strike of the rock, if stratified.

You will keep a diary of your proceedings and a register of the thermometer and Anroid barometer at regular hours of the morning and evening, daily.

Ascertain the latitude and variation of the compass when you have opportunity.

Your own pay will be £1 10s. a day while employed in this service. Mr. Gladman will pay your party and furnish provision and other necessaries for the exploration.

You will draw a plan of your operations, on a scale of one mile to an inch, showing as much of the natural features of the country as may come under your observation.

In addition to your diary and field notes you will furnish a report containing a concise summary of your proceedings, with general observations on the Physical Geography of the country, its capabilities, and the best mode of developing them.

I have, &c.
(Signed,) E. P. TACHE,
Commissioner of Crown Lands.

Crown Lands Department,
Toronto, 18th July, 1857.

(Copy.) CROWN LANDS DEPARTMENT,
Toronto, 22nd July, 1857.

SIR,—I have been directed to transmit you, for the information and guidance of yourself and your staff on the expedition about to proceed to explore the route from Fort William to the Red River, an extract from the letter of instructions addressed by the Government to Mr. G. Gladman, the director of the party, relative to the general conduct of the party, and the control to be exercised by Mr. Gladman in reference thereto, and I have to direct you to be subject to those instructions which are authorised by order in council.

A copy of the order in council of the 18th instant, authorising the expedition is also enclosed herewith.

Alexander Wells has been appointed your chief assistant, Charles De Salabury your explorer, and G. F. Gaudet and Lindsay Russell your chain-bearers.

Mr. Wells is to be paid at the rate of £20 a month, and your other assistants above mentioned at the rate of 7s. 6d. a day each.

I have, &c.
(Signed,) ANDREW RUSSELL,
Assistant Commissioner of Crown Lands.

SECRETARY'S OFFICE,
Toronto, 22nd July, 1857.

SIR,—I am directed to inform you that His Excellency the Administrator of the Government, has been pleased to appoint you to conduct the Engineering branch of the expedition about to be sent to the Red River Territory, under the control and direction of George Gladman, Esquire.

There are appointed on your staff an assistant, a rod-man, and two chain-men. Your remuneration is fixed at £1 10s. per day, that of your assistant £20 per month, and that of each of the others on your staff at seven shillings and six pence per day. All matters and details whatsoever connected with the provisioning and transport of the party, with the hiring and discharging of the men, and the conducting of the expedition, determining routes, stoppages, encampments, &c. &c., are under the direction of Mr. Gladman, who has received full instructions and authority therefor. Among these instructions he is specially directed to prevent spirits of any description from being taken up or procured by any of the party at any time. He is likewise to regulate the number of fire-arms that will be allowed, and to caution each member of the party, while attached to it, from communicating by writing, or otherwise, any information upon the progress or results of the expedition except to the Provincial Secretary.

He will, some time hence, when he considers it expedient, send a messenger, who will carry his despatches to the government, of the time of doing which he will give you due notice, in order that you may have an *ad interim* report prepared to be transmitted by such messenger, addressed to the Provincial Secretary, which report will detail minutely the operations of your branch of the party.

The nature of the duties connected with the engineering branch will, in the first instance be, to examine generally the present Hudson's Bay canoe route from Fort William, (by which Mr. Gladman will first lead the party,) paying particular attention to the parts where obstructions present themselves, whether in the form of falls, or shallows, on the rivers, lakes or creeks, or of long and difficult portages, so as to be enabled to furnish a tolerably correct sketch thereof, describing the nature and extent of the obstacles, and in what manner they could best be removed or overcome. For this purpose instrumental examinations, levels and measurements, will, in some cases, be indispensable, in other cases you will be enabled to arrive at a sufficiently correct approximating decision without them.

After the Hudson's Bay canoe or Northern Route is so examined, Mr. Gladman will probably direct your attention to the Southern route, between Rainy Lake and Lake Superior, by Pigeon River. This, also, will be similarly explored and examined so as to enable you to report on the relative merits or demerits of each.

The ultimate intention of Government is the construction of a good commissariat road through British territory, suited to the great amount of trade that may reasonably be calculated on between Lake Superior and the Red River district, and the immense region of cultivable territory beyond it. It is considered probable that the most eligible route for communication may be found to be about the course of the present Hudson's Bay route between Fort William and Rainy Lake, on which account Mr. Gladman will, in due time, draw your attention to different lines to be explored in that direction, with the view of avoiding the present obstruction; and as the chief difficulties to be encountered in the communication to the Red River settlements lie between Rainy Lake and Fort William, this section will, necessarily, require careful exploration.

Whether your party will continue on from Rainy Lake to Fort Garry, or will return either by the Southern or Pigeon River route, or proceed to explore north and south of the course by which you ascend, with the view of ascertaining whether a good line may not be found in that direction, will be governed by Mr Gladman, with whom it will be your duty cordially to co-operate, and offer any suggestions in your line you may think will tend to the interest of the expedition.

Each individual on the staff of the expedition, with the exception of the Geologist and his assistant, is distinctly to understand that his services are to be at the command of Government for twelve months, and that he is to winter in the territory, if required.

In all cases of your party being separated from the general body, such separation is to be governed by Mr. Gladman, who will take care that you are provided with the means of transport, the necessary assistance, provisions, &c. &c. An abstract from the instructions furnished to Mr. Gladman is hereto appended for your instruction and guidance.

(Signed,) E. Parent,
Assistant Provincial Secretary.

W. H. Napier, Esq., C. E.

Secretary's Office,
Toronto, 22nd July, 1857.

Sir,—I have the honor to inform you that his Excellency, the Administrator of the Government has been pleased to nominate you Geologist and Naturalist to the party which is to leave this city immediately for Fort William, for the purpose, in the first instance, of examining the line and state of the communication thence to Fort Garry, on the Red River. It being indispensable to the satisfactory result of the expedition, as well as to the safety of the party, that one individual should be invested with the general control and management of it, Mr. Gladman has been invested with the authority and responsibility, for which he is considered eminently qualified, from his long residence in the Territory, his acquaintance with the leading lines of communication, with the trading posts, with the tribes of Indians with whom the party will necessarily come in contact, and with the extent and nature of the supplies which can safely be calculated on as procurable in the country during the course of the expedition. By him, therefore, will be regulated and determined the movements of the party, the routes to be taken and explored, and all matters connected with the provisioning and transport of the party, the hiring and payment of all the men, and all other matters of detail whatever comprised in the general conduct of the expedition.

From the nature of your duties, it may be necessary that you should occasionally separate yourself from the party. In such cases you will state so to Mr. Gladman, who will take care that you are provided with the necessary provisions and means of transport, and with all such necessaries as you may require; and he will arrange with you as to the places and times for your re-uniting yourself with the main body.

As you will require the services of an Assistant, the appointment of an efficient one is left with you, his remuneration not to exceed £20 per month. That of the Geologist, Engineer, and Surveyor is fixed at thirty shillings per day each.

The objects to which your attention is requested are of general character, comprising a description of the main geological features of the country you traverse, and whatever pertains to its natural history which you may have an opportunity of observing and recording.

In relation to its geology, you will be guided by the memorandum furnished you by Sir William Logan; giving especial attention, as far as lies in your power, to the following points:

1.—The boundaries of formations.
2.—The distribution of limestone.
3.—The collection of fossils.
4.—The occurrence of economic minerals.
5.—The exact position of all faits, and the altitude of the rock.

The distribution of limestone should be made a constant subject of question with every one you meet.

With reference to natural history, you will, if at the time convenient, and the object capable of transportation, collect whatever may appear to be new or of interest; and you are requested to record in a daily journal, such facts in connection with this subject as may present themselves to your notice, when not susceptible of representation by specimen or illustration.

A general description of the whole of the country you traverse, from Fort William, westward, is very desirable; and it is advisable to note, as minutely as possible, all leading features of topography, vegetation and soil, along your line of route.

You will proceed with the main party to Fort William, and continue with it, or with such party as may be detached from it, as much as is consistent with the efficient prosecution of your own exploration and researches. It may, of course, be occasionally necessary, as already adverted to, that you should separate from the others for a short time, for which course Mr. Gladman will afford you all requisite accommodation; but as that gentleman's instructions require him to explore not only the present canoe route of the Hudson's Bay Company, from Fort William by Dog Lake, Lake of the Thousand Islands, Lac Croix, Lake of the Woods, and Lake Winipeg, to Fort Garry, but also in returning to examine the former North West Company's route by Pigeon River; and further to examine or survey the line of Rat River, from the Red River to its source, and the intervening country between it and the Lake of the Woods; it is not probable that there will be much necessity for your leaving the party for more than a few days at a time, which is desirable, from its limited number and the late season of the year.

It is arranged with Mr. Gladman, that he is to send a messenger, some time hence, with despatches to the Government, explanatory of the progress made towards carrying out the object of the expedition; and by this means you will also have an opportunity of making such *ad interim* report as you may consider desirable. You will determine the return route to be taken by you and your assistant, whether by Lake Superior or by St. Paul's, as you may be led to believe will most conduce to the attainment of the object of your branch of the expedition.

When materials for illustrating the geology and natural history of the country accumulate, so as to render their transportation an inconvenience, you will hand them over in packages, properly made up and directed, to Mr. Gladman, who will take care that they are safely lodged at some of the posts, and arrangements made for their being securely conveyed to this city.

Your reports and communications upon the various subjects to which your attention is directed will be addressed to the Hon. Provincial Secretary; and it is presumed to be unnecessary to impress upon you the propriety and expediency of taking care that the subject of such reports, and the results of your labor, shall be only so communicated.

I have the honor, &c.

(Signed,) T. L. TERRILL,
Provincial Secretary.

H. Y. Hind, Esq.,
Professor, &c.
Trinity College.

REPORT.

FORT FRANCIS,
Rainy Lake, 19th August, 1857.

SIR,—I have the honor to report my arrival here yesterday evening. I came on in advance of the other canoes, for the purpose of obtaining guides for parties to proceed by way of "Rat River," to "Fort Garry," and by the "River des Bois," from "Rainy Lake," to "Lake of the Woods." Before proceeding further, however, I beg to detail briefly our proceedings to this time.

Leaving Collingwood on the 24th July, after calling at various places on Lake Huron, the steamer arrived at the Sault Ste. Marie on the 27th. On the 28th, during an extremely dense fog, the steamer ran on the rocks off Michipicoton Island, in Lake Superior. She was got off again late the following afternoon without sustaining any material damage, and put into the harbour to re-arrange coals, &c., which had been moved the previous day in order to float the steamer. Leaving the harbour on the next evening (30th) we arrived in safety at the mouth of the Kaministiquia, and landed at Fort William late on the 31st. My attention was immediately given to the arrangements of canoes, men and provisions, and on Monday I was enabled to send off three canoes in advance, and followed with three more on the next day. Pursuing the route designated in my instructions as the Hudson's Bay route, I arrived as above remarked, yesterday, and expect the other canoes will be here in course of the day.

The greatest difficulty to be encountered in navigating this route, appears to me to be the shoalness of the waters immediately below the Mountain Fall. For about nine miles above Fort William there is sufficient depth of water to enable a steamer to ascend the stream, and the distance from thence in a direct line, according to the surveyor's estimates, not exceeding eighteen miles. I see no better means of improving that part of communication than by opening a road that should pass the three first and most difficult portages. Mr. Napier is of opinion that it would be impracticable to raise the water by damming the stream, the fall being too precipitate and the banks not sufficiently high or firm to admit of the construction of such works.

From the Dog Portage to the Prairie Portage, a distance of thirty miles, it appears to me quite practicable to remove the greater part of the obstructions caused by the few intervening shoals of rocks, and thus admit of free navigation, even for boats ; and I do not thing the cost of the improvements would be great.

From the east end of the Prairie Portage to the head of the Savanne Rivulet, (the first stream of waters descending towards Hudson's Bay) embracing about five and a half miles of land carriage, by present route, it is probable that a minute survey would shew that a road may be formed, which would pass at one stretch the three longest portages in the whole communication. Being obliged, however, by the necessity of economizing our voyaging provision, and passing rapidly onward, we could not make that particular examination of this portion of the route which we would have wished to do. Had we a stock of provisions on hand here at Rainy Lake to meet the requirements of so large a party, we should have been glad to spend two or three days in determining this interesting point, but under present circumstances, a more particular survey must be deferred to a future time.

There is yet another line of communication between the Kaministiquia and the Lake of Thousand Islands, on which I would offer a few remarks. A small river falls into the Kaministiquia from the westward, a few miles south of the Dog Portage. It is represented by the Indians who hunt in that part of the country as impracticable for a large canoe, but quite passable in a small one. There are numerous portages, and it appears to take its rise in the same line of swampy country over which we passed at the "Savanne." If a guide can be procured, I shall endeavour, on the return voyage, to send a party to report upon it. The distance from the Lake of Thousand Islands to Fort William is travelled over in winter by that track in three or four days.

From the Savanne River to the French Portage (which is the last long one on the route), the obstructions in the navigation are not of any great magnitude, and certainly do not present greater, if so great, difficulties as are met with on the route from York Factory to Red River. A small stream running to the southward of French Portage, admits of passing without making that portage at all, except the water be very low; and this may be provided against by the erection of a barrier, for which there is abundant material. My own canoe passed that way, and the only impediment met with was from the overhanging branches and trees fallen across the stream, which being removed by my men enabled the other canoes to pass freely.

From the French Portage to the Rainy Lake there are few portages, and those very short. Here again improvements may be made, which would increase the amount of open navigation, and facilitate greatly the transport of emigrants and goods.

Having thus given a brief outline of past proceedings, I will now state the course I propose to take from here.

I have engaged a guide to proceed with a party from the north-west end of the Lake of the Woods to Red River. The route is represented as being perfectly feasible in a small canoe, the only portage being the swampy height interwoven between the waters that fall into the Winipeg River. I am assured that this passage by Rat River will not occupy more than six or seven days, the party travelling with light equipment.

The results of this interesting exploration I hope to transmit from Red River. I have also engaged another guide to lead a party from Rainy Lake to the Lake of the Woods, by the Rivière du Bois, which party will join me on my way to Red River at the Rat Portage. This tract is, as I am informed invariably used by the Indians, in coming from this port to the Lake of the Woods. It is much shorter, and they avoid the strong current of the Rainy River.

I beg to refer to the accompanying brief reports by Messrs. Napier, Dawson, and Hind, for a statement, each in his particular department, of the rivers of the route over which we have passed ; and I trust that the whole of our joint proceedings will meet with the approval of the Government.

I have the honor to remain,
Sir,
Your most obedient servant,
(Signed,) GEORGE GLADMAN.

Honble. T. L. Terrill,
Provincial Secretary,
&c. &c. &c.

FORT FRANCIS, LAC LA PLUIE,
20th August, 1857.

SIR,—I have the honor to report for the information of the Government, the safe arrival at this point yesterday of that portion of the Red River expedition under my charge, in company with Professor Hind and Mr. Dawson.

We arrived at Fort William on the 31st ult., where we were detained three days, procuring men and preparing canoes. Whilst there we received the greatest kindness and assistance from Mr. James McIntyre, the Honble. Hudson's Bay Company's officer in charge of that Fort, but for whose prompt aid we might have been considerably retarded, as, from the near approach of the fishing season, men expressed a decided unwillingness to accompany us, and even those who finally consented to hire could not be induced to continue with us beyond the Rainy Lake.

I have been informed by Mr. Gladman, that those men return to Fort William in the morning; in accordance, therefore, with my instructions I beg to forward the *ad interim* report upon the nature of my operations hitherto and plans for the future. Owing to the very limited time for preparation, it must be but a very brief sketch.

Mr. Dawson and Professor Hind, with their respective parties, left Fort William on the 3rd inst., and Mr. Gladman and I on the following day. On the 5th we all again met at the head of the Mountain Portage (Kallabeka Falls), since which time we have continued together, with the exception of Mr. Gladman, who parted from us on the 8th inst., at the Dog Lake Portage, considering it expedient to hasten with all speed to Fort Francis in order to make further arrangements as to men and equipage, to prevent any delay upon our arrival.

In conjunction with Mr. Dawson, levels have been taken throughout from Fort William on Lake Superior, to this place, together with measurements and observations which, when completed to the Red River Settlement, will afford sufficient data to form *Plans* and *Sections* of the entire route; these, together with a detailed report, I hope to be able to forward to you as soon as possible after my arrival at the settlement.

Up to this time we have been favoured with a continuance of fine weather, which we have taken every advantage of, invariably starting soon after day break, and not camping until a late hour in the evening ; the advanced period of the season rendering it expedient to hasten on with the least possible delay.

In approaching the height of land dividing the water-shed of Lake Superior from that of Hudson's Bay, we experienced a gradual increase in the coldness of the nights ; on the night of the 15th inst., the thermometer fell as low as 33° Farht. ; as we descended this way the temperature has sensibly increased.

From Fort William to this point, owing to various causes, the parties have all travelled by the same route ; but as from this place westward there are three distinct routes, which should undoubtedly be examined without delay in order to ascertain their respective merits, and which would be most deserving of more critical examination at a future period, it has been decided to divide into three parties.

Professor Hind and Mr. Dawson, in two small canoes, proceed by the Roseau River from the Lake of the Woods to the Red River. Mr. Gladman, with the bulk of the party and baggage, in three north canoes, takes the usual route down the Rainy River to the Rat Portage at the end of the Lake of the Woods, while I with one assistant in a small canoe, examined the northern route, from the Lac la Pluie, down the Rivière des Bois to the Lake of the Woods, joining Mr. Gladman at the Rat Portage. We purpose starting from here in the morning, and hope to reach the Red River Settlements by the end of the month.

Since our arrival at Fort Francis, we have experienced the greatest assistance and attention from Mr. R. Pether, the Hudson's Bay Company's officer in charge. He has kindly furnished us with guides, and the small canoes necessary for making these separate explorations ; besides affording us a deal of valuable information concerning the country through which we have to pass: indeed, from the general good feeling exhibited towards us by all the Company's officers whom we have as yet met, we may reasonably expect similar assistance at other posts, which in this country we feel to be essentially necessary, both for safety and comfort.

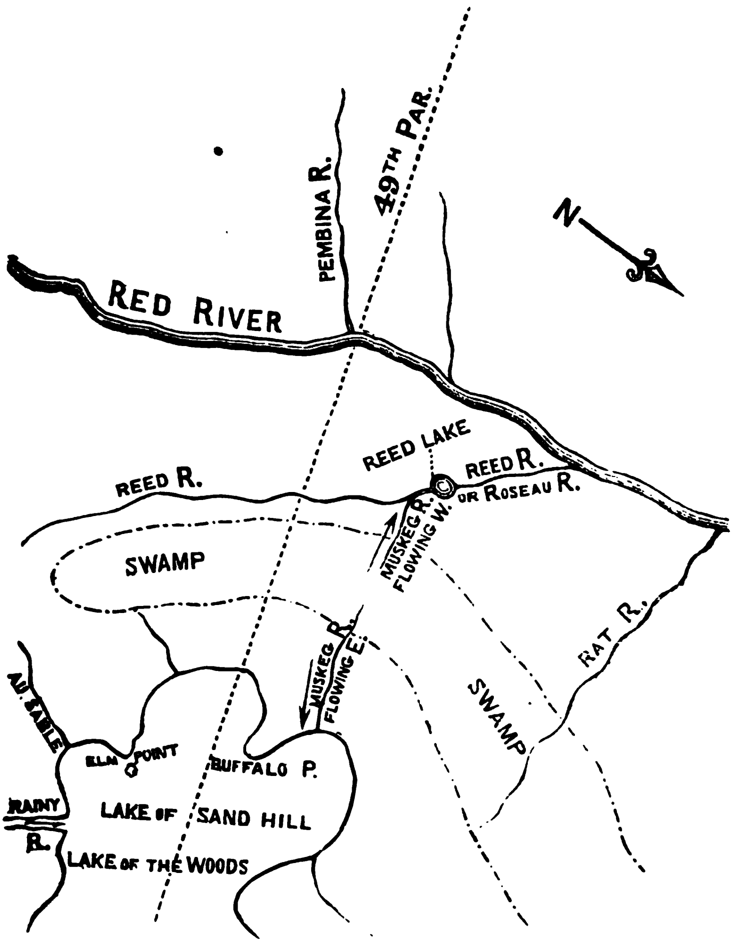
We have been exceedingly fortunate in finding the waters in the rivers at an excellent pitch for running the heavy rapids, through all of which we have as yet passed without a single accident, and from all we can ascertain of the remaining portion of our journey, we have every confidence of arriving at our destination with safety, and in good season.

I have the honor to be,
Sir,
Your most obedient servant,
(Signed,) W. E. Napier.

Copy of Chart by Indian guide of the route proposed to be taken from Lake of the Woods to Red River, by Muskeg River (E) swamp, and Muskeg River (W) into Reed River.

H. Y. Hind.

Rainy Lake, 20th August, 1857.



FORT FRANCIS, RAINY LAKE,
20th August, 1857.

SIR,—I have the honor to inform you that I arrived at Fort Francis, Rainy Lake, in company with the other members of the Red River expedition, on the evening of August 19th.

The misfortune which happened to the steamer Collingwood near Michipicoton Island, and the necessary arrangements for procuring men and canoes at Fort William, delayed our departure from that establishment of the Hon. Hudson's Bay Company until Monday, August 3rd, at 5 p. m., when, in company with two canoes conveying Mr. Dawson and his assistants, I proceeded with my assistant, Mr. I. Fleming, up the Kaministiquia River.

The general plan of observation adopted at starting, and continued up to the present time, has been as follows :

When in canoe, we took the courses of the rivers and lakes by compass, noting the distance of each turn by time and the speed of the canoe, to serve as the basis of a general geological and topographical chart of the route ; we directed especial attention to all rock exposures on the banks of the rivers and on the shores of the lakes, and where no doubt existed as to their character, appended to each record of such exposure its appropriate designation and position on the chart.

Similar attention was directed to the general character of the vegetation, and the different kinds of trees were enumerated ; also, as far as opportunity would permit, the nature of the soil, and the rock on which it reposed.

The temperature of the rivers and lakes was ascertained several times during the day. I have also noted in a daily journal the different kinds of animals seen, and all other incidents or observations which appear to possess any importance or interest.

When crossing the portages or when in camp, our attention was directed to the collections of specimen of rock, and in some instances of subsoils, also to the determination of the dip, strike, and mineral characteristic of the rocks ; to the collection and preservation of all kinds of vegetable met with ; and when opportunity offered we ascended some neighbouring hill or eminence, and took general bearings by means of prismatic compass. A minimum thermometer enabled me to keep a record of the minimum temperature during the night.

The canoe assigned to me proved unfortunately to be, not only very slow, but in bad travelling condition, requiring constant repair, and no small canoe being attached to the brigade, I have not been able to visit many localities out of the direct line of route, and even had such a canoe been available, it is not probable that much use could have been made of it, as the brigade was compelled, with its heavily ladened components, to push on to our destination with the least possible delay.

The weather has hitherto been very favorable, and the waters of the rivers and lakes, for this season of the year, unusually high.

At Fort William I received, in common I believe with every member of the expedition, great kindness and ready assistance from the gentleman in charge, Mr. McIntyre.

The health of the people in my canoe has been uniformly good with the exception of one Ojibway Indian, who acted as bowman; he has not been able to work for four days, and is now in a very weak condition.

The time at my disposal will not permit me to enter upon a description of the country we have traversed, and I am therefore compelled to limit this *id interim* report to a few general remarks, in relation to past observations and future plans.

The whole of the country from the Portage D'Ecartier, on the Kaministiquia to the foot of the Rainy Lake, shows a constant recurrence of the so-called primary or unfossiliferous rock, comprising granite, gneiss, micaceous, chloritic and stomblendic schists. Below the falls of Rainy River I have this day seen abundance of silurian limestone in detached masses, without, however, meeting with the rocks *in situ*.

The aspect of the country about the extensive and beautiful Lake of the Thousand Islands, and in many other localities on the shores of the larger lakes, bears traces in all directions of having, at a not very remote period, been covered with magnificent forests of white and red pine, and also, in patches with the pitch pine of the voyageurs, a tree which now prevails in its second growth, with aspen and birch. Everywhere, isolated, groves or trees of white and red pine of large dimensions occur, and among the comparative young forest growth, are seen scathed or half burnt trunks of large dimensions, remaining as witnesses of vast conflagrations, at the different epochs, which have spread over many thousand square miles.

The region about Dog Lake, Lake of the Thousand Islands, Sturgeon Lake, &c., is very interesting and in some respects promising, while the shores about Rainy Lake are by no means inviting.

In relation to my future operations, I beg leave to state that I proceed with the main party to the Lake of the Woods, and then in company with Mr. Dawson, pass up the Muskeg (swamp) River, cross the dividing ridge or swamp, and go down Roseau River, according to an enclosed copy of a rough plan which an Indian from that part of the country drew for me this morning. We shall be compelled to travel as light as possible in two of the smallest sized canoes, capable of holding three persons each.

Mr. Dawson will take one canoe, with a guide and an Iroquois Indian. I shall have a similar canoe with the Indian guide who drew the map and a French Canadian voyageur.

The only difficulty we apprehend is the accidental meeting of a returning war party of the Lac La Pluie Indians, who have been on "the war path" against the Sioux. We trust, however, to the proper interpretations of our reasons for travelling through that part of the country, being made to any Indians we may happen to meet by the guide in Mr. Dawson's canoe, who has been kindly permitted to go with us by Mr. Pether, the gentleman in charge of Fort Francis.

This precaution Mr. Pether considered to be necessary, not only on account of the possible treachery of the Indian guide, but because the Lac La Pluie Indians have, it is here stated, prevented the botanist attached to Capt. Palliser's party from continuing his botanical explorations, and have expressed considerable anxiety and feeling, at so large a number of white men coming into their country, for reasons which they profess they cannot understand.

Mr. Fleming will proceed with Mr. Gladman down the Winipeg River to Lake Winipeg and Red River, and will continue to make and record observations similar in character to those in which he has been hitherto engaged.

I propose to return to Toronto by way of Penbina and St. Paul's, as that route will afford much longer time for exploration and inquiry in the Red River country besides offering opportunities for obtaining information of interest or value.

I have, &c. &c.

(Signed,) H. Y. Hind, M. A.

To the Honorable
The Provincial Secretary,
Toronto.

21st August, 1857.

P. S.—Since the foregoing report was written, I have been informed that the guide who was permitted by Mr. Pether to accompany us to Red River by the Muskeg route, will not be able to give us the benefit of his services on account of illness; we shall be therefore compelled to rely on the good faith of the Indian who drew the original of the accompanying plan, but who has already expressed fears that his people will upbraid him for showing us the way through this comparatively unknown country.

H. Y. H.

RAINY LAKE FALL, FORT FRANCIS,
20th August, 1857.

SIR,—I have the honor to report that we are so far on our way to Red River; but as the canoes make but a short delay, there is no time for compiling a detailed statement, or writing a particular description of the country through which we have passed, I must therefore be brief.

After arriving at Fort William it was determined upon that all the parties should proceed by the way of the Kaministiquia, Dog Lake, and the Lake of the Thousand Lakes to Rainy Lake. On the evening of the 3rd instant I started in company with Professor Hind. Next morning Mr. Gladman and Mr. Napier followed and came up with us on the succeeding day at the Grand Portage; from thence all the parties have travelled in company, Mr. Gladman preceding us by a day's journey in a well manned canoe to this place, in the hope of being able to engage men to replace the Indians hired at Fort William, none of whom could be induced to accompany us further, on account, as Mr. McIntyre informed us, of the dread they entertain of the Indians in the direction of Red River. But now that we are here, only two or three Indians can be found, nearly all the tribes being either on their hunting-grounds, or out towards Pembina, on an excursion against the Sioux, with whom they are at feud. The greatest portion of the party Mr. Gladman will take with him, by the usual route, the Winipeg River and Lake to Red River, in three large canoes, manned partly by the Iroquois who are with us, and partly by the young gentlemen assistants who accompany the expedition.

The chief of the geological branch, Professor Hind, and I, are to cross the country from the Lake of the Woods, by way of Reed River; my principal assistant, Mr. Wells, will accompany the party going by the Winipeg River, while Mr. Napier, with some of his staff, proceeds by the Indian route to the north of Rainy Lake; once arrived at Red River, Mr. Gladman is confident of being able to engage men, and procure provisions; so that we shall then, I sincerely trust, be in a position to organize proper working parties.

I have made a careful estimate of the distances as we proceeded, and traced the outline of the rivers and lakes, besides which I have obtained Indian charts of the streams near the line of route, and also of some of the rivers falling in on the north shore of Lake Superior. All of which appear to be drawn with great fidelity.

The temperature has been duly registered, but the nature of our progress would not admit of regular barometrical observations; but these, as soon as an opportunity offers, shall be duly attended to.

In taking the levels of the different rapids and falls, where there were portages, Mr. Napier and I, in order that no delay might be occasioned, have acted in concert, going alternately in advance; or where there was much work to be done, commencing at once from either end of the space, over which the levels had to be taken. By this means we avoided delaying the canoes in the least by our operations.

Immediately on arriving at Red River I shall report at length, giving a full description of the country we have traversed. In the meantime I can only endeavor to convey very briefly a general idea of the route.

The Kaministiquia is but a small stream, not so large quite, I should say, as the River Trent, which falls into the Bay of Quinté. For the first ten miles or so it is smooth, and the navigation for canoes unimpeded, there is then a continuous flat rapid to the Grand or Kakabeka Falls, which, however, is not so difficult but that canoes can be poled up with facility. From the Grand Falls upward to Dog Lake the river is exceedingly rough, there being a continuous succession of falls and rapids, with but short intervals of smooth water between them.

From Dog Lake there is nearly forty miles of uninterrupted canoe navigation, by a small stream that winds through a marsh; then occur two little rapids, over one of which a portage has to be made; after which the route lies by a narrow brook, just wide enough for the canoes, which runs from Cold Water Lake, the source of this branch of the St. Lawrence. Across the height of land, taking the Prairie, Savanne, and another little portage together, there is a land carriage of nearly five miles, broken only by two little lakes or ponds. From the Savanne Portage to the Lake of the Thousand Lakes, there is no impediment except from trees that have fallen across the stream. Leaving the lake just named, the route passes by a chain of lakes to the Manackan River, the northern branch of which runs into Rainy Lake, as shown on the plan, a copy of which has been furnished me.

The navigation throughout, although tedious, is not difficult; we ran no dangerous rapid, and as to finding the way, it is well known to all the Indians and Voyageurs, and is not by any means intricate.

In regard to its general features, the country is varied. The valley of the lower part of the Kaministiquia is, I should think, well adapted for settlement. On ascending, however, the land becomes very rough and broken, although the hills are of no great elevation. Dog Lake is a large sheet of water, with numerous islands interspersed. The land rises to a considerable elevation round it, but the hills are not steep or in continuous ranges, but swell up gradually as it were in isolated mounds. The prevailing growth of timber, as far as could be perceived, seemed to be poplar, of a large size, and birch; the undergrowth is however, in some cases, of maple, and I dare say, that that description of wood may be found inland, although not in great quantities.

I have not made up my notes so as to be able to give the exact elevation of this lake above Lake Superior; but I may state that the difference of level in round numbers exceeds 700 feet. From Dog Lake upwards the Kaministiquia, or, as it is here called, Dog River, winds through a marsh varying from half a mile to a mile in width; on either side the country is of the same character as at Dog Lake.

At the Prairie Portage, which here forms the dividing raidge between the waters flowing in this direction and those running towards the St. Lawrence, the country appears comparatively level, covered with a dense growth of pitch-pine, spruce, tamarack, white birch, and on the rising ground, poplar. The

Savanne Portage is nothing more than an ordinary spruce and tamarack swamp, with about two feet of soft vegetable mould over a stiff bottom of yellow clay. At the Lake of the Thousand Lakes, I think there must be good soil. The green woods inland appeared to me like maple, and on the islands and projecting points there is in some instances white pine of a large growth. Although the country appears to be considerably elevated, there are properly speaking no hills. The land rises gradually from the lake, presenting a smoothly swelling outline against the distant horizon.

The other lakes between the Lake of the Thousand Lakes and this place, have the same general character, of being dotted with islands, but the country about them is in general more broken than at that lake. In some cases there appeared to be abundance of red and white pine of a good size. As regards the climate or the soil, no correct inference can be drawn, as in other countries, from the growth of wood. From the Grand Lakes on the Kaministiquia to this place, the whole country seems at no very distant period to have been over-run by fire. In every direction in going into the woods, are to be found the charred remains of a former growth, and where an extensive view presents itself, solitary trees or isolated groves of tall white pines stand out from forests of surrounding poplar. There can be no doubt, however, that the climate about the height of land, from the great elevation of the country, must be rather cold. Where we now are, I should say it was something like the climate of the Ottawa. At the Hon. Hudson's Bay Company's farm at this place, the potatoes look luxuriant, and the spring wheat is fast ripening.

Should the route by which we have come, be adopted as the leading highway to the Red River, the communication might be made easy, so far as the source of the Kaministiquia, by making a good road from Thunder Bay to Dog Lake, and throwing a dam 16 feet in height across the outlet of that lake, which would have the effect of converting the marsh through which Dog River winds into a lake as far as the Prairie Portage at the height of land. Kaministiquia from Dog Lake down, tumbling as it does, as far as the Grand Portage, over broken rocks, and down steep declivities, with its barren and rugged shores, can never be made an available route for traffic. I merely advert to these subjects, and shall report more at leisure on reaching Red River. In the meantime I cannot close this letter without mentioning the kind attention and assistance we have met from the officers of the Hudson's Bay Company. But for Mr. McIntyre, we should have had difficulty in getting men at Fort William. So anxious was he to aid us, and forward us on our journey, that he not only used his all-powerful influence with the Indians, to induce them to go with us, but actually took his own men from the work they were at, and made them come.

Mr. Pether, the officer in charge of this place, has not been less obliging. He has obtained us guides for the different routes by which we are going, and has otherwise been most civil and attentive.

I have the honor to be,
Sir,
Your most, &c., &c.
S. J. Dawson.

Public Works,
Toronto, 30th November, 1857.

Sir,—With reference to a communication of Mr. G. Gladman, transferred by you to this department, with a list of payments due on account of the Red River expedition, I am directed to request that you will furnish this office with a statement of the rates of pay respectively to be allowed to the persons employed in that service.

I have the honor to be,
Sir,
Your obedient servant,
Thomas A. Begly.

The Honorable
The Provincial Secretary.

The President of the Council has the honor to submit the annexed list, marked Schedule A, which contains the names of the parties composing the expedition to Red River, as organized in the month of July last, with the rates of pay, which, on consultation with the Commissioner of Public Works and the Commissioner of Crown Lands, were provided for the different members of the party. No formal minute in the Council sanctioning these rates appears to have been made, and it is respectfully suggested that a minute in Council should be now passed accordingly, to avoid confusion.

(Signed,) P. M. VANKOUGHNET,
President Council.

Toronto, 5th January, 1857.

On a memorandum dated the 5th instant, from the Hon. the President of the Executive Council, submitting the annexed list marked Schedule A, which contains the names of the parties composing the Expedition to the Red River, as organized in the month of July last, with the rates of pay which, on consultation with the Commissioners of Public Works and the Commissioner of Crown Lands, were provided for the different members of the party.

No formal minute in Council having been made, sanctioning the rates mentioned, the President suggests that a minute in Council be now passed accordingly to avoid confusion.

The Committee recommend that the rates of pay assigned to each member of the expeditionin the accompanying list be sanctioned.

Certified.

(A.)

Names of the Expedition Party, 23rd July, 1857.

Geo. Gladman	Director	Pay, 35s. per day.
Henry Gladman	Assistant	" £20 per month.
W. H. E. Napier	Engineer	" 30s. per day.
H. H. Killaly	Leveller	" £20 per month.
Ed. Cayley	Chainmen and General Assistants.	" 7s. 6d. per day.
C. DeSalaberry		" 7s. 6d. "
J. Cayley	Assistant Leveller, Rodman, &c.	" 7s. 6d. "
S. J. Dawson	Surveyor	" 30s. "
L. Russell	Chainman	" 7s. 6d. "
G. F. Gaudet	Do	" 7s. 6d. "
—— Campbell	Do	" 7s. 6d. "
Professor Hind	Geologist	" 30s. "
W. Fleming	Assistant	" £20 per month
A. W. Wells	Assistant to Mr. Dawson, appointed by instructions to Mr. Dawson from Crown Land office	" £20 "
J. Dickenson	Engineer (Volunteer) engaged at the request of Mr. Napier, to accompany the party without pay.	

Remained at Fort William.

Robert Wigmore..Employed to superintend making of road, building temporary store and dwelling at Point de Meuron on Fort William River, 4 months, at £12 10s.	£50
Canoe-men engaged at	5s. per day.

RED RIVER SETTLEMENT,
8th September, 1857.

SIR,—My last letter was addressed to you from Rainy Lake. I now beg to acquaint you with the arrival here of myself, Professor Hind, and Mr. Napier, with the greater number of our party, safe and well.

Mr. Dawson was detached, at Rainy Lake, from our main party, as already advised, with instructions to proceed by the Red River to Fort Garry, making such observation of the route as time and circumstances might permit. Most unfortunately, that gentleman became alarmingly ill, and after ascending the lower part of the stream was obliged to retrace his steps, and, following the course of the main party, arrived at the Mission Station, Islington, on the Winipeg River, where his illness obliged Professor Hind to leave him until the state of his health would permit his removal to this settlement.

I have sent a canoe for him, and hope by the aid of medical advice and attention, that he will soon be here and able to resume the duties of Exploration and Survey.

At Fort William, the information I had previously received of the portages on the Pigeon River, being chiefly on the American side of the frontier line, and necessarily so, was confirmed. On arriving at Rainy Lake, however, I made further inquiry on this point, and that information was distinctly corroborated. I then directed my attention to the best means of opening the communication between the Lake of the Woods and this settlement. Meeting with many conflicting statements, I thought our best course would be to explore thoroughly (which has never yet been done) the whole country between the Red River and the Lake of the Woods, and thus determine with certainty how and where the best line of communication could be carried through. I therefore leave instructions with Mr. Napier, to examine during the autumn, winter, and spring, the section of country between the Stone Fort and the Rat Portage, as far south as the Rat River; and have assigned to Mr. Dawson the exploration of the other section (south of the Rat River, to the boundary line, between the upper part of the

Red River and the Lake of the Woods. I look upon this as a very important part of the survey, inasmuch as the communication by the Winipeg River may be considered as of no practical utility. The boat navigation of that river is exceedingly broken and interrupted by heavy falls and rapids, as well as being very circuitous, thus increasing the distance also very greatly. I therefore think it will be quite unnecessary to occupy our time any further in explorations or measurements of that route.

I have made every arrangement in my power for the support and comfort of the parties whom I shall leave here. They have an ample field of employment, and I have no doubt they will acquit themselves with the same zeal and energy which they have hitherto displayed.

In the month of June next they will extend their survey to Rainy Lake, and it will be necessary to have supplies sent to meet them at that point, as soon as the opening of navigation in spring will admit of their being sent forward. On this point I shall have plans to submit when I arrive at Toronto.

Mr. Hind purposes remaining at the settlement until the first week of October, when he will leave for St. Paul's, accompanied by three other gentlemen of our expedition party. There will then be left for the winter, Mr. Dawson, with his assistants, Messrs. Wells, Gaudet, and Russell; and Mr. Napier and his assistants, Messrs. Killaly, DeSalaberry, and Campbell. I shall be prepared to set out on my return to Canada on the 11th, and hope to arrive at Toronto on the 15th or 20th October.

The reports of my colleagues in this expedition cannot be got ready during the short period of my stay here. They will consequently be transmitted by Professor Hind.

I beg leave to advise having drawn, on account of the expedition, for twenty pounds currency, favor of John Rowand, Esq. being to cover the expenses of Mr. John Cayley from Red River to St. Paul's, which draft will, I hope, be duly accepted and paid.

The arrangements for the wintering of my party necessarily occupy a large portion of my time, therefore I defer my report on the route until I shall reach Toronto.

I have the honor to remain, Sir,
Your most obedient and very humble servant,
GEORGE GLADMAN.

To the Honorable
The Provincial Secretary,
Toronto.

ISLINGTON MISSION,
Winipeg River, 30th August, 1857.

SIR,—The circumstances which have led to the opportunity now afforded me of informing you of the result of an attempt to penetrate from Lake of the Woods to Red River by way of Muskeg River, as intimated in my last report, will be best explained by a brief narrative of proceedings since our departure from Fort Francis.

It will, perhaps, be sufficient to state meanwhile that I am detained at this mission by the illness of Mr. Dawson, who is prostrated by a very severe attack of remittent fever, and I am much pained to say that if no favorable change takes place within the next twenty-four hours, I find difficulty in suppressing a fear that the most distressing results may be anticipated. Under any circumstances, he will probably not be able to regain his usual health and strength for some weeks. As I do not intend to take any decisive step until to-morrow, for reasons which will appear in the course of this narrative, I beg leave to occupy the time which is thus painfully placed at my disposal in penning this report.

On Saturday, August 22nd, I started from Fort Francis at noon, in company with Mr. Dawson, for Muskeg River, Lake of the Woods. We were provided with two small canoes fit for transportation through the swamp which separates the water-shed of Red River from that of the western shores of the Lake of the

Woods. In Mr. Dawson's canoe were a French Canadian (François) and an Iroquois (Pierre.) In my canoe an Indian guide from Garden Island, Lake of the Woods, and Lambert, a French Canadian, who acted as interpreter. We were furnished with provisions to last for ten days, one change of clothing, a small tent, and a pair of blankets each.

RAINY RIVER.

The valley of Rainy River afforded a very delightful contrast to the barren shores of Rainy Lake, and for a distance of sixty miles offered the utmost luxuriance of vegetation and all the aspects of a most promising field for future settlement. I made numerous enquiries of the Indian guide during our journey respecting the breadth of the valley, and the answers received coupled with the statements of Mr. Pether, the gentleman in charge of Fort Francis, and my own and Mr. Dawson's observations have enabled me to form a definite idea of its geology, and to furnish a tolerably accurate view of its extent and capabilities.

On the north, or British side, the valley of Rainy River is of variable breadth; behind Fort Francis it is bounded by a swamp, distant from the fort about half a mile. The swamp soon retires from the river, until it is distant half a day's journey from it, or from twelve to fifteen miles. Near the Lake of the Woods it again approaches the river, and about twelve miles from its mouth the valley is three hours' journey in breadth, which may be represented by from seven to nine miles.

The Indian guide said that the valley on the United States side was similar in many respects to the northern half. He described it as also bounded by a swamp, with several ranges of low hills crossing it at nearly right angles, two of which occur at the rapids on the river, and others approach and terminate at the south bank, the river gently sweeping round them.

Confining my observations almost exclusively to the British side, the description which follows refers solely to the valley on the northern bank.

The river flows upon an alluvial bed partly of its own formation, the materials being derived probably in great part from the cutting away of the drift clay and sand which constitutes the higher of two plateaux by which its boundary is now defined. The first or lowest plateau is generally from twelve to fifteen feet above the present water level; it frequently terminates on the river in abrupt low clay bluffs, capped with loam and sand, or rich alluvial deposits.

Behind the lowest plateau, and often almost imperceptibly rising from it, a second plateau occurs, elevated above the first from fifteen to thirty feet; occasionally both plateaux come upon the river together in one bold bluff, often forty feet in altitude, and again the lower plateau is sometimes found to occupy the bank without the higher one in the rear, being visible from a canoe.

The separation of these plateaux is a very important item in the description of the topography and general characteristics of Rainy River.

Where the lower plateau is alone visible, the vegetation it sustains is often characteristic of a poor and sandy soil. Red pines, some of them of fair dimensions, red cedar and small poplars occupy it, and if any passer by were to draw an inference from the prevailing timber which, in such situations, meets the eye, he would at once form the opinion that the land was comparatively worthless. But let him cross the lower plateau until he reaches at a distance of two hundred yards, or perhaps a quarter or half a mile, the higher plateau, and the magnificent growth of poplar, balm of gilead, with elm and basswood, would quickly reverse such judgments. As far as I penetrated in different places back from the river, the soil of the higher plateau was of admirable quality, and supported a heavy growth of timber. The clay upon which it rested was often exposed by the steep banks of numerous sluggish streams which cut the plateau to nearly the level of Rainy River, and evidently form channels by which the swamps in the rear are drained.

I often observed what I considered to be drift clay, when high bluffs, formed by the union of the two plateaux, came upon the river. The accompanying section will perhaps serve to show the relation of the several parts of the valley of Rainy River to one another:

The following extracts from my journal will convey a more correct impression of the country than a brief description. Numerous items of interest, however, are necessarily omitted here, which will appear in the general report to be furnished when I return to Toronto.

Extracts from Journal.

August 22nd. * * * * * Dined about twelve miles below Fort Francis, on a high bank destitute of trees, which had probably been destroyed long ago by the Indians or by fire. The ground is covered by the richest profusion of rose bushes, woodbine, convolvulus in bloom, Jerusalem artichoke just beginning to flower, and vetches of the largest dimensions.

Fringing this open interval of perhaps two hundred and eighty acres in extent, were elms, balm of gilead, ash and oak. One elm tree measured three feet in diameter, or nine feet eight inches in circumference, and there is no exaggeration in saying that our temporary camping place is like a rich, overgrown and neglected garden.

The golden rod is shewing its rich hue in all directions, and gives a distinct yellow tint to an open grassy area on the opposite side of the river, at the mouth of Red Lake River.

Similar intervals to the one on which we are now encamped have been noticed occasionally, and hitherto the banks have maintained an average altitude of about forty feet, bearing a fine growth of the trees before named. No part of the country through which we have passed from Lake Superior westward, can bear comparison with the rich banks of Rainy River thus far. The river has preserved a very uniform breadth, varying only from two hundred to three hundred yards. The soil is a sandy loam at the surface, much mixed with the vegetable matter.

Occasionally where the bank has recently fallen away, the clay is seen stratified in layers about two inches in thickness, following in all respects the contour of what seems to be unstratified drift clay below.

Basswood is not uncommon, and sturdy oaks, whose trunks are from eighteen inches to two feet in diameter, are seen in open groves, with luxuriant grasses and climbing plants growing beneath them. The lodge-poles of an Indian camp of former seasons are covered with convolvulus in bloom, and the honeysuckle is twining its long and tenacious stems around the nearest support living or dead. * * * * *

* * * The banks of the river maintain for twenty miles (the distance we have now come) an altitude varying from fifteen to sixty feet. Occasionally the banks show abrupt boundaries of the plateaux. The lower boundary having the form of a sloping bank or an abrupt cliff of from fifteen to thirty feet in altitude on the river. The upper plateau rising gradually or abruptly from fifteen to twenty feet higher, according to its position with reference to the river.

There is every appearance, in places, of fire having destroyed a former larger growth of trees than those which occupy now these areas.

* * * The extraordinary height of the water at this season of the year is seen by the lodge-poles of former Indian encampments at the foot of the bank being under water to a depth of one and even two feet! The river does not appear to rise high in the spring, as the trees fringing the banks to the water's edge show no action of ice.

Mr. Pether states that the river never freezes between the Falls at Fort St. Francis and the Big Fork, a distance of twelve miles, or between Rainy Lake and the Falls, a distance of three miles. The difference between the highest and the lowest water levels may be seven feet, and no records of recent higher levels meet the eye. * * * * *

August 23rd. * * * Reached the Rapid of Rainy River* at a quarter past six, a. m. They let us down about two and a half or three feet, and appeared to be caused by a belt of rock crossing the river at right angles to its course.

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* Two in number; are capable of being ascended by a small steamer of good power without difficulty, and cannot be considered as presenting an obstacle to the navigation of this important stream, as long as the water maintains its present altitude, which is about three feet higher than is usual at this season of the year, but often exceeded in spring. Mr. Dawson informs me that two locks of ten feet lift, with one guard lock, would overcome the falls at the mouth of the river, and thus form a splendid water communication between the head of Rainy Lake and the foot of the Lake of the Woods—a distance of about one hundred and eighty miles—(180).

On the American side the hill range has an altitude of about eighty feet, on the Canadian side it is much lower and appears to subside in gentle undulations. High clay banks are exposed above and below the rapids. I was much surprised at the number of birds of different kinds, chirrupping and singing in the light and warmth of a bright morning sun. I heard more birds in ten minutes there, than during the whole journey from Kakabeka Falls, on the Kaministiquia. * * *

At the second rapids, an extensive area, destitute of trees, offers a very beautiful prairie appearance. Here we landed to examine two immense mounds, which appeared to be tumuli. We forced our way to them through a dense growth of grasses, nettles, and Jerusalem artichokes, twisted together by wild convolvolus. On our way to the mounds we passed through a neglected Indian garden, and near it we observed the lodge polls of an extensive encampment.

The garden was partially fenced, and contained a path of Jerusalem artichokes six and seven feet high in the stalk, and just beginning to show their flowers.

The wild oat here attained an astonishing size, and all the vegetation exhibited the utmost luxuriance. The mound ascended was about 40 feet high, and 100 broad at the base; it was composed of a rich black sandy loam, containing a large quantity of vegetable matter. On digging a foot deep, no change in the character of the soil was observable. The Indian guide called them underground houses. * * *

* * * About three hundred yards below the second rapids, twenty-three skeletons of Indian lodges are seen, all clothed with the wild convolvolus, and now serving as records of the love of change which seem to form a characteristic in the habits of this barbarous race who possess, without appreciating or enjoying, the riches of this beautiful and most fertile valley.

Limestone fragments and boulders, more or less water-worn, with pebbles of the same rock, are found everywhere on the beach at the foot of the clay or loamy banks. * * *

When we landed for dinner to-day, I strolled about half-a-mile back from the river, and Mr. Dawson went about half-a-mile further. We found the vegetation improving fast as we receded from the river. Aspens of very large dimensions, balm of gilead, basswood, birch and oak, with some elm, formed the forest. The land rose very gradually, and on enquiring from the Indian how far back the good land stretched before coming to the swamp, he said that here the valley was broadest, and it would take us half-a-day to reach the swamps, journeying the whole time through land similar to that around us, but with larger trees.

The singular topographical knowledge acquired by these Indians, and (as far as we have yet been able to ascertain,) the accuracy and fidelity with which they communicate it, assures us of the Indian's statement; we shall have opportunities of testing his knowledge of these matters soon, which must not be overlooked. * * * * * * * *

The remaining portion of Rainy River exhibited features similar to those already described in foregoing extracts from my journal. There are numerous items of interest relating to the geology, topography, soil and Indians, which I have not thought proper to introduce in this brief sketch, as they will form a part of my general report.

Mr. Pether, of Fort Francis, informed me that the swamps in the rear of Rainy River valley, consists of a peaty accumulation, through which a pole may be thrust in places to a depth of thirty feet without finding bottom.

The guide stated that the swamp supported no large trees, but a thick growth of low bushes.

As we approached the Lake of the Woods, the river increased in breadth, and at each bend a third low plateau was in process of formation, often two and three hundred acres in area, and elevated above the present high water level from one to three feet. Coarse grasses grow in abundance upon many of the rich outlying alluvial deposits, and it appears very probable that in ordinary seasons they would furnish some thousand acres of rich pasture land, as the grasses are like those which, on the Kaministiquia, the settlers cut for their winter supply of fodder for cattle. Near the mouth of the river the tall tops of a few red and white pines rise far above the aspens occupying the lower plateau, and a vast reedy expanse, probably in ordinary seasons available for grazing purposes, marks the junction of Rainy River with the Lake of the Woods.

Omitting for the present the enumeration of some interesting phenomena observed and recorded in our traverse of the Lake of the Woods direct to Garden Island, near the western coast, I must be content with mentioning that on the evening of August 24th, we camped near a well cultivated field of Indian corn, and a rapid exploration of the island revealed to us a large potato patch, and a small area devoted to squashes and pumpkins of different kinds.

We ascertained that the island had been cultivated by the Lake of the Woods Saulteux Indians for generations. Mr. Dawson and the Iroquois, Pierre, both complained for the first time that evening of being unwell.

Our camp fire evidently soon attracted the attention of a number of Indians, who were then living on a neighboring island about four miles from us, for at midnight we were aroused by the sudden appearance at the door of the tent of two of these people, and in half an hour twenty or more had arrived. In the morning we answered their enquiries, and were requested to visit their chief, who remained with his tribe on the island already referred to. Declining their invitation, as we were anxious to hasten to the mouth of the Muskeg River, they told us they would send for their chief, who would arrive as soon as the wind fell. We made the necessary preparations for a long council, and about noon the chief's son, who was amongst the first arrivals on the evening previous, announced that the canoes were coming.

We counted thirteen canoes, and found that they contained in all fifty-three men and boys, there being seven of the latter; the others were the chief and warriors of the tribe. A portion of them had just returned from an expedition against the Sioux, and were decorated or disfigured, according to taste, with whatever advantages paint, feathers, and ornaments could confer. As the object of their visit was to ascertain the reasons why we wished to pass through this part of their country, and as some excitement had been occasioned among them by Capt. Palliser's party, briefly referred to in my former report, I considered it necessary to note with care the conversation which ensued, and previously arranged with Mr. Dawson what our line of conduct should be, in anticipation of not improbable difficulties.

The following conversation then took place, Lambert acting as interpreter, receiving the necessary questions and replies from Mr. Dawson and myself:

Chief.—"Tell them all these they see around me are my own tribe. It is our custom to smoke before talking. We shall follow the practice of our fathers."

About half-an-hour was devoted to the distribution of tobacco, the filling of pipes, and the smoke, after which the chief resumed.

Chief.—We do not think you will start to-day, we wish to know what you are doing in our country, (to the interpreter) what are these men, are they ministers, or surveyors, or what are they?

Reply.—We are instructed by our chief to journey to Red River, and have been told to take this route.

Chief.—We have heard that you have been gathering flowers, what does that mean?

Reply.—To amuse ourselves when on the portages or in camp; we have gathered your flowers because some of them we have never seen before.

Chief.—The white man looks at our flowers and trees and takes away the Indian's land. Did these men see nothing near the Fort on Rainy River?

Reply.—They saw nothing extraordinary.

Chief.—Did they not see a grave near the fort? A single grave: a chief's grave. All these people here are descendants of that chief; and they do not know for what purpose you have been sent here, or why you pass through this part of our country.

Reply.—We are merely travelling through the country, by the shortest route to Red River: we have said so before.

Chief.—We ask this, because there are braves here who have not heard this reason for visiting our country, and we have asked it again that all may hear and know it. All around belong to one tribe and are one people; we are poor, but we have hearts, and do not wish to part with our country.

Reply.—Our Government have no intention of taking your country, and have no wish to interfere with your property in any way; we are anxious to be on friendly terms with you.

Chief.—Some people are gone down the Great River from the Rat Portage two or three days ago, why did you not go with them?

Reply.—We were ordered to go this way to Red River; and as your young men obey your orders, so do we those of our chief.

A Brave.—Why did their chief send them by this route?

Reply.—Our government gave orders to our chief and he told us to go by this route to Red River; they thought it was the shortest way: we are not traders but messengers.

A Brave.—Why did you not go with your chief?

Reply.—Our chief sent us, and waits for us at Red River. He will return by the Rat Portage, and give every explanation to you; he will return in three weeks.

Chief.—We think you want to do something with these paths, and that is the reason why you have been sent.

Reply.—We have been sent by this route because it is the shortest, and we have to obey our instructions.

Chief.—We hear that there is one who is gone by the back lakes (Mr. Napier), the worst path he could have taken; why did he go?

Reply.—He was sent, and therefore compelled to go.

Chief.—It would be thought very hard by our young men, and must be thought hard by you, to be sent on a journey for purposes which you are not allowed to know.

Reply.—Our Government has business at Red River, and has sent us as messengers by this route. Our chief will soon come back, and give you all the information you seek.

A Brave.—Why did that man send his people through our country without asking our leave?

Reply.—He was greatly hurried, and heard that you were scattered, some on the "war path," others fishing, and others gone to the rice grounds. He did not think there was any chance of finding your chiefs.

Chief.—All these paths through which you wish to go are difficult and bad. They are of no use at all, and we cannot let our people work for white people, or go with you.

Reply.—We do not expect them to go for nothing; we cannot go alone at present, and must rely upon your assistance.

Chief.—I do not know what good it will do to us to show you that road.

Reply.—It will do you do no harm, and as strangers we cannot go alone.

Chief.—The man who sent you, did he think he sent you through his own country?

Reply.—On our road we met a traveller who had just passed through the lake, he was an officer of the company, and he told us you could not now be found, as you were either on the war path or fishing; he said that we might see you at Fort Francis, but you had left some days before we arrived here.

Chief.—I don't think you will be able to pass by that way, the path is bad. What did the guide receive from you at Fort Francis? he must give all back, we cannot let our young men go with you to show the path. Your head man has no right or claim to the road, and you must pass by the old way. If you will go, we shall not interfere; but you will go alone, and find the way for yourselves. Recollect, I have said the path is bad.

Reply.—We ask you now to send us one of your young men to show us the road; we shall pay him well, and send back presents to you: what do you ask?

Chief.—It is hard to deny your request; but we see how the Indians are treated far away. The white man comes, looks at their flowers, their trees and their rivers; others soon follow him: the lands of the Indians pass from their hands, and they have a home nowhere. You must go by the way the white man has hitherto gone. I have told you all.

Reply.—What reason can we offer to those who have sent us, for your having refused to allow us to travel through your land?

Chief.—The reason why we stop you is because we think you do not tell us why you want to go that way, and what you want to do with those paths. You say that all the white men we have seen belong to one party, and yet they go by three different roads, why is that? Do they want to see the Indian's land? Remember, if the white man comes to the Indian's house, he must walk through the door, and not steal in by the window. That way, the old road, is the door, and by that way you must go. You gathered corn in our gardens and put it away, did you never see corn before? why did you not note it down in your book? did your people want to see our corn? would they not be satisfied with your noting it down? You cannot pass through those paths. (Cries of No! No! (Ka-ween! Ka-ween!) from all.)

Reply.—We paid you for your corn in tobacco; we tell you now that we are anxious to go by that Muskeg road to Red River, because we have learned that the path is travelled by the Americans (Long-Knives); we want to see if it be true, if they come through this country, and what these white men are doing. Remember, we are your friends, and we shall be glad to be always friendly with you.

Chief.—Why did you not say that at first; we know you had good reason for going through those bad paths?

Reply.—We spoke without authority; we have told you our own opinion, but we were not told to tell you this.

Chief.—A pity you did not say that at first. A pity you did not say that at first, (repeated). (After some consultation with other chiefs he continued,) We thought there was something, but our own word to-day is spoken, and we cannot change it. All say this, and the Council is at an end.

The chief then said to the interpreter, "Let not these men think bad of us for taking away their guides; let them send us no presents, we do not want them. They have no right to pass that way. We have hearts, and love our lives and our country. If twenty men came, we would not let them pass to-day. We do not want the white man; when the white man comes, he brings disease and sickness, and our people perish. We do not wish to die; many white men would bring death to us, and our people would pass away; we wish to love and hold the land God has given to us and our fathers won. Tell these men this, and the talk is finished."

A hasty consultation with Mr. Dawson as to what we should do in this dilemma, was abruptly closed by being informed that the Iroquois Pierre was very ill, and at the back of the tent. Without his paddle, without guide, and Mr. Dawson feeling much worse than on the evening previous, we determined at once not to attempt to cross the swamp at the height of land, alone, and decided to go to Red River by the Rat Portage.

We told this to the chief, and asked for assiatance to take the canoe to Red River.

He pointed out two young men, who received orders to take us down the Winipeg. One was to return from Rat Portage, the other to go on to Red River. We then told the chief that we should send him some presents from Red River, at which he expressed satisfaction, and at our request he suggested tea and tobacco. We told him we should soon come again, and by these paths, and hoped that we should then have no difficulty in procuring guides. An old man, not a chief, said, another day it may be different; we have spoken to-day, and cannot alter a word.

It remains for me now to say, that on the next morning both Mr. Dawson and the Iroquois were very ill, and lay quite help-less in their canoe. I gave the only medicine accessible, and Mr. Dawson found much relief from mustard emetics. At Rat Portage no medicine could be obtained, and Mr. McKenzie, the gentleman in charge, was absent; we remained for an hour, and then hurried on to the Mission, where we hoped to overtake Mr. Gladman or Mr. Napier, who were well supplied with the necessary medicines. I beg leave to extract the following note from my journal, which will best explain the difficulties of our position.

Extracts from Journal.

Wednesday, August 26th. Camped on an island about six miles from Garden Island. Pierre complained of much pain: "My meat (flesh) all bad—all great pain." Terrific thunder storm during the night. Mr. Dawson passed a sleepless night. In the morning, when seven miles from our camp, saw numerous lodges. Our guide informed us that the tribe accompanying them were more than twice greater in number than those we had seen yesterday. Entered at noon a labyrinth of islands. Mr. Dawson commenced vomiting, and we stopped to take dinner. Gave mustard emetic; it relieved him, and felt better.

Mr. Dawson and Pierre are lying at the bottom of the canoe, wrapped in blankets, Francois and an Indian paddling. * * *

Thursday, 27th. Mr. Dawson passed a sleepless night; in a high fever, with frequent vomiting of bilious matter; mustard emetic gave him much relief for a time. Pierre, as before, but weaker. * * * * Our route lay through innumerable islands, not marked in any chart in our possession; the invalid still in the same condition. Reached Rat Portage at half-past twelve noon. Finding no medicine or proper food, and hearing that the other canoes started at seven A. M. this morning, and Mr. Mackenzie being absent, we set out from Rat Portage at half-past one P. M.

The Indian Guide took us by a short cut which he said was half a day shorter than the Winipeg route. Heavy thunder-storm with hail, at half-past two. Mr. Dawson was wet through, with all his bedding soaked; camped to dry his clothes. Both invalids worse, and growing weaker. Neither of them has taken food which remains for a minute on the stomach, since we left Garden Island. * * * * August 28th.—Arrived at the Mission at half-past nine P. M. Were received with the greatest kindness by the Rev. Mr. McDonald, the missionary of Islington ; gave Mr. Dawson calomel.

Saturday. Another sleepless night ; proposed in the morning to start alone with one light canoe, and endeavour to catch those of the main party before us, who had set out from the mission at noon yesterday.

Mr. McDonald thought there was no doubt but I should catch them before they reached Fort Alexander, procure proper medicine, assistance and food, and return in three or four days.

Mr. Dawson however being very ill indeed, urged upon me to stay with him, and I yielded, contrary as I told him, to my own judgment. But I feared with Mr. McDonald, that my leaving him, even for three or four days, would seriously increase his illness, and perhaps endanger his life.

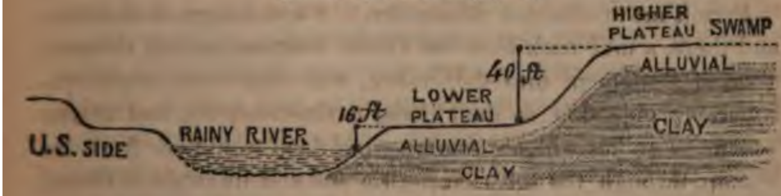
Monday morning, August 31st. Lambert told me early this morning, that Pierre's body was covered with purple blotches or blisters. Mr. Dawson, who heard the communication, was evidently troubled.

Gave Pierre a strong dose of salts, no other medicine which we thought appropriate being available. In the afternoon Mr. Dawson showed symptoms of delirium ; at night gave 5 grains calomel, 15 grains jalap ; during the night delirium increased, and at 3 A. M. (Monday) he was quite delirious, asking repeatedly about the mission, the Winipeg, what time we would be all ready to start, &c. &c. At four he slept soundly, and woke at seven quite calm and collected. * * * * * We decided then that it would be better for me to start at once for assistance, and dictated the letters—a copy of which I beg to enclose, to Mr. Gladman, and Mr. Wells, his first assistant. I now finish this narrative to make preparations for an immediate start. I may perhaps mention, that I have just asked Mr. Dawson why he objected to my leaving him on Saturday to obtain assistance. He replied, that he did not expect to live. * * * * It would ill become me to conclude without expressing in the warmest manner our deep sense of obligation to the Rev. Mr. McDonald. The haste with which I am necessarily compelled to draw this imperfect narrative to a close, does not allow me to enumerate here the acts of attention, kindness and christian sympathy which that gentleman has showered upon us; we feel indeed that under these very painful circumstances, he has nobly, both to the letter and the spirit, worked out to the utmost of human power the profession of his faith: and had it not been for his exertions and the means at his disposal, it might, humanly speaking, have been my painful duty to have recorded a different close to these brief but serious troubles, in the midst of a barren and desolate waste. I am happy to say too, that Pierre is better, the spots have all subsided and he is now moving about. When I arrive at Fort Alexander or Red River, I shall hasten to submit further intelligence.

I have the honor to be,
Sir,
Your obedient servant,
HENRY YOULE HIND,
Geologist, Red River Expedition.

To the Honorable
The Provincial Secretary.

(Section referred to on page 41.)



FORT GARRY, RED RIVER,
Tuesday, 8th September, 1858.

SIR,—I have the honor to enclose a copy of a letter which I have just sent to the Rev. Mr. McDonald, of Islington Mission, Winipeg River. From it I trust you will learn the nature of the steps I have taken to assist in sending relief to Mr. Dawson, and that they will, so far as they go, meet with your approval I feel conscious that no further efforts on my part, under present circumstances, would have enabled me to extend or increase them. In reviewing report No. 2, which I wrote at Islington Mission, I find it conveys a very inadequate idea of the importance of the valley of Rainy River, and that I have not been able to introduce some very interesting facts respecting the islands and coast of the west side of the Lake of the Woods, a region quite out of the ordinary canoe track, and but little known as far as I can ascertain from enquiry here. I have taken copious notes during the whole trip, since leaving Fort Francis, and shall have great pleasure in communicating what I think will be information of some value, at my earliest leisure moment.

From what I have seen of the Red River settlements there is a vast field for inquiry open here, and of a character so surprising and encouraging, and so much opposed to the impressions which generally prevail respecting this country, that I shall have great difficulty in securing all the information I require during the short month which now remains at my disposal. Each succeeding hour's experience shows the necessity of relying upon personal observation alone in all that relates to the physical aspect of the country and its immense capabilities.

Permit me to offer one illustration. I was informed that here and there, a mile back from the River, swamps oppose the progress of settlement into the Prairie, and that there was an insuperable objection to their being drained on account of the enormous gullies which a single spring flood would cut from the swamp, through the soft rich prairie soil and its subjacent marl and clay. Along the course of the little ditch first dug, I saw some of these gullies originating from a ditch two feet deep; they were thirty feet deep and perhaps a hundred feet across. But while they effectually drain the swamps and create admirable pasture fields, they involve the necessity of the construction of bridges to cross them. These items of expense the settlement cannot afford to pay, and no other funds are available but those derived from the inhabitants. Hence in order to avoid building a few cheap wooden bridges, the swamps remain undrained, the pasture limited and exhausted by constant cropping, and the boundaries of the settlement confined.

On Thursday, I propose to go across the Prairie to the Prairie Portage, on the Assinniboine, a distance of seventy miles; where, I am told, but I receive the information with doubt, that I shall find the extremity of an outlying patch of the great lignite bed of the Saskatchawan. This excursion may take five days, and offers many facilities of seeing the Prairie country. I propose then to proceed up the Rat River to the boundaries of the limestone, and afterwards up Red River to the boundaries there of the same formation, these being the main points of Geological interest which are at this late season of the year accessible. About the 5th of October I hope to be able to start by way of Pembina to St. Paul's, and by slow travelling acquire materials for a sketch of the country through which we shall pass.

I have the honor to be, &c.,

HENRY YOULE HIND.

To the Honorable
The Provincial Secretary.

FORT GARRY,
Tuesday, 8th September, 1858.

MY DEAR SIR,—Notwithstanding a head wind on the Winipeg Lake which delayed us several hours, we managed to reach the Lower, or Stone Fort, at 6 p.m., on Saturday last. On enquiring I found that the canoes had started for Fort Garry at about 11 o'clock, four in number. I therefore immediately procured a horse and hastened on to the Upper Fort, arriving there at half-past 9 in the evening; and having seen Mr. Wells, I learned that Mr. Gladman was visiting his relations at some distance from our camp, about five miles as he supposed. Nothing could be done that night, but early in the morning Mr. Wells procured a horse and went to see Mr. Gladman who, after hearing the statement of the case, decided that nothing could be done that day (Sunday), and promised to be in the camp early the next morning.

He arrived at half past 10 on Monday but although every effort was made by many attached to the expedition to see him, he could not be found until 2 p.m. All items necessary to send to you and Mr. Dawson had long been ready, but for reasons which I am not prepared to explain, no canoe was despatched last night, although I did not fail to urge the necessities of the case, and was repeatedly seconded in this endeavor by Messrs. Napier, Wells, Gaudet, and others. This morning there is a prospect of the canoe being despatched. I have seen Archdeacon Cochrane, and he kindly undertook to deliver the letters with which you favored me, to their several destinations.

Your Indian boy, who acted as guide, has expressed a wish to remain here until you arrive, but I have insisted upon his returning with the canoe according to your express desire. Mr. Gladman is to give him a complete suit of clothes for the winter for his services, and I shall leave a little present which you will please give him at your discretion when you come to Fort Garry.

I hope that Mr. Dawson is now fast recovering, and I cannot but feel and express the deepest regret that so much unnecessary trouble should have occurred here in despatching a canoe. I feel pursuaded that there did not exist a single satisfactory reason for not despatching a canoe on such an errand on Sunday morning. Even if a crew among our men could not befound we should not have had the least difficulty in getting any number of men we wanted at the door of the Roman Catholic Church after mass; as it is possible the canoe may soon start it is probable that I shall not have time to write to Mr. Dawson, but if you will kindly show him this hurried letter, he will see that I have done the utmost in my power to obtain for him the assistance he so much requires. The men in the canoe worked very well, and often rose an hour before daylight.

I almost forgot to say that neither men nor a canoe were to be found at Fort Alexander. Through the kindness of the Chief Justice of Rupert's Land, Mr. Gaudet will bring with him numerous little things for Mr. Dawson, which he will find very acceptable. I hope I shall see you again before I leave the settlement.

Meanwhile accept my warmest thanks for your kindness and sympathy,

And believe me to be,
Sincerely and gratefully yours,
Hy. HIND.

The Reverend Robert McDonald,
Islington Mission,
Winipeg River,
Rupert's Land.

ISLINGTON MISSION,
August 31st, 1857.

SIR,—Professor Hind will explain our reasons for coming this way. The Professor has promised to send a canoe from Fort Alexander, but should he fail in being able to do so, I trust you will lose no time in sending a canoe for me.

I have the honor to be, &c.,
S. J. DAWSON.

G. Gladman, Esq.

ISLINGTON MISSION,
August 31st, 1857.

MY DEAR WELLS,—The Professor will explain all our journeyings to you since we parted. I am very low and very weak, and it may possibly be a fortnight before I am able to do anything. Urge Mr. Gladman, if Mr. Hind does not succeed in finding men at Fort Alexander, to lose no time in sending a canoe for me. I have had a very narrow escape indeed. Send such things as Mr. Hind will name, such as rice, and sugar, and, if you can procure it, a bottle of Port wine, to put in the sago. Survey Reed River as far up as you can. It would be better to do this first, and also the streams running in from that direction. Consult Mr. Gladman about it.

Yours very sincerely,
(Signed,) S. J. DAWSON.

Mr. Wells.

FORT GARRY,
September 9th, 1857.

SIR,—Availing myself of the opportunity of Mr. John Cayley's departure to-morrow for Canada, by way of St. Paul, I have deemed it advisable to inform the Government of the safe arrival of my party at Fort Garry on the 5th instant, in company with Mr. Dawson's party, under Mr. Wells. As we are still under canvass, and unlikely to get settled for some days to come, I shall not be able to forward the plans, &c., of the routes I have examined as soon as I had anticipated, but I hope to send them by Professor Hind, who purposes leaving for Canada by the 6th.

I can, therefore, give only a short account of my proceedings from the date of my last letter from Fort Francis, together with general description of the route. In consequence of my canoe men being discharged at Fort Francis, being engaged only thus far, great difficulty was found in procuring another crew for the remainder of the journey. However, by the 22nd a crew of four men was made up and I then started my canoe with my assistant and baggage, down the Rainy River, the usual route. Immediately afterwards I left in a small canoe with Mr. Gaudet and two men, taking another route, returning to Rainy Lake, and then by series of small lakes and creeks reached the N.E. extremity of the Lake of the Woods, and having passed through countless channels caused by the numerous Islands in this part of the Lake, I arrived at the Rat Portage on the evening of the 26th, when I met my assistant and Mr. Wells' party who had arrived there that morning. This route is only preferable to that by Rainy River in winter, as it is shorter. I shall, however, forward a plan and detailed account of it hereafter. My assistant describes Rainy River as a fine large stream of an average width of 7 chains, and depth 6 feet. There are no Portages in it, and but three small rapids which are easily run, it is very straight throughout its entire length, and the current, when he passed down, never exceded in any part except at the rapids, which are very short, the rate of two miles an hour. About ten miles from the Fort Francis, a large tributary joins the Rainy River from the East, and five miles further on, another large river flows in from the same direction. The land is from ten to fifteen feet above the water, and in several places seems to be very good, elms and oak appearing here and there. The passage across the Lake of the Woods was happily made by them without much difficulty, the weather fortunately being favorable, but it is generally considered dangerous, as some of the traverses are rather long, and sudden storms are frequent, which renders the passage of them rather hazardous. Mr. Gladman arrived at the Rat Portage the day before us, and staying there a few hours again left us behind. I had great difficulty in procuring here a guide and another man absolutely necessary for safely descending Winipeg River, where the rapids are so numerous and dangerous, those men I got at Fort Francis not knowing the river sufficiently well. At Islington Mission it was considered necessary to procure another canoe, as mine and Mr. Dawson's were considerably overloaded. The Rev. Mr. McDonald kindly lent us one, into which some of the baggage and two of the party were put with a crew of four men. The advantage of this arrangement was seen shortly when we had to cross numerous Portages, and descend several rapids, most of them exceedingly dangerous. Winipeg River may be said to be the most difficult and dangerous part of the whole route; for some distance it has more the character of a chain of large lakes dotted with Islands, and then contracting to a rapid river a few chains in width. We succeeded in reaching Fort Alexander on the 1st of September, when we met Mr. Gladman. After waiting there but a few hours we proceeded to cross Lake Winipeg, and after the detention of one day on the Lake, owing to a gale of wind, we arrived finally here on the 5th.

On my next return, I will forward the plans and sections of the route, which will clearly explain the various portages and rapids, shewing their respective position and peculiarities. It was our intention, on leaving the Rat Portage, for one party to explore the Pinewa, a branch of the Winipeg, which falls into the head of Lac de Bonnet, but owing to the water in the river being low, and the heavy manner in which our canoes were loaded, it was not deemed prudent by the guide to attempt it. I shall be able, however, to procure from Professor Hind, who came by it in a light canoe, correct information as to its general character which will enable me to form an opinion as to whether it would be desirable to make a further exploration of it.

Owing to the unfortunate illness of Mr. Dawson, and his detention at Islington Mission, I have not as yet been able to decide as to when the examination of Roseau River and Rat River can be made. It is, however, my intention to examine the country between the Red River and Lac des Bois; and much valuable information concerning its nature can be procured here from persons who have hunted over it, and are thoroughly acquainted with it.

Mr. Gaudet has been despatched to Islington Mission with the necessary medicine and other articles for Mr. Dawson; and I trust we may have the satisfaction of seeing him again in 10 or 15 days.

At Fort Garry we have been very well received by Governor Johnston, and Mr. McTavish, the chief factor, and indeed by all the inhabitants whom we have as yet met; and I have no doubt but that every facility will be afforded us, as far as it is possible, to carry out our explorations and examinations with satisfaction. We are making exertions to procure quarters, and the necessary provisions for the winter: but find it a matter of some difficulty, as most of the available stock has been secured for the troops which are expected here shortly—still I have no fear but that we shall be, in every respect, well provided for before the winter sets in.

I have the honor to be,
Sir,
Your obedient servant,
W. H. E. Napier.

To the Honorable
The Provincial Secretary.

St. Paul, Minnesota Territory,
28th October, 1858.

Sir,—I have the honor to inform you that I arrived at this place in company with my assistant, Mr. Fleming, and Messrs. Dickenson and Cayley, formerly associated with Mr. Napier's party, after a journey of 40 days from Fort Garry, Red River settlement.

I am happy to be able to state that Mr. Dawson arrived at Fort Garry on the evening of the 8th October. I delayed my departure until the 9th, in order that I might see him, and thus be able to afford the testimony of an eye-witness respecting his recovery. I regret, however, to have to say that he has endured much suffering, and is greatly reduced, but with a fair prospect of speedily regaining health and strength. I also visited the Rev. Mr. McDonald, of Islington Mission, Winipeg River, who accompanied Mr. Dawson to Fort Garry. From him I learned that some days after my departure for Red River, in search of assistance, Mr. Dawson's illness increased; he became deaf, blind, and senseless; a looking glass put before the mouth was not dimmed, and all hope of recovery was given up by those around him. Subsequently a change for the better took place, and as a last resource, Mr. McDonald brought an Indian "medicine man," who bore an excellent reputation among his tribe for his skill in the use of herbs, to see him. The Indian "medicine man" administered his specifics, and so far effected a cure, that in a few days Mr. Dawson was able to sit up; and eventually became sufficiently strong to bear the fatigue of a canoe voyage from Islington Mission to Fort Garry. With care and attention, under the direction of the medical officer in the service of the Hudson's Bay Company, it is to be confidently hoped that he may soon be able to resume his duties.

Since the date of my last report, I have visited,

1st. The Assiniboine River, for a distance of seventy miles in a straight line from Fort Garry.

2nd. The Reed Grass or Rousseau River, as far as the dead water of that river, at its junction with the swamp leading to Reed Grass Lake.

3rd. Big and little Rat Rivers, and the Reed Grass river, as well as between Rat River and Fort Garry.

4th. The Red River settlement, as far as the Indian Mission north, and Pembina on the 49th parallel south (100 miles.)

If the following scheme of a general report on my department of Red River Expedition meets with your approval, I shall be able to furnish on my return to Toronto the several sections in the order and at the times mentioned below.

REPORT, &c.

Part I.

Topography of the Route.

Section 1.

Fort William, Lake Superior, to Fort Francis, Rainy Lake.

Section 2.

Fort Francis, Rainy Lake, to Indian Settlement, Red River, via west side Lake of the Woods.

These two sections to be accompanied with a topographical sketch or map of the whole country traversed, including Red River to the 49th parallel, the Assiniboine River to Prairie Portage, Reed Grass River to the dead water of its feeding and Lake, Little and Big Rat Rivers, some of the ancient beaches of the Lake Winipeg, in the valley of Red River, and the whole of Red River settlement.

The foregoing sections and the topographical sketch or map, on a scale of two miles to one inch, can be furnished by the twelfth of December.

Section 3.

Red River settlement, the Assiniboine River, as far as the Prairie Portage, and its settlement.

Section 4.

Fort Garry to Pembina, the Reed Grass River, the Little and Big Rat rivers.

These sections can be furnished by the first of January.

PART II.

Geology of the Route.

Section 1.

Geological sketch of the country between Fort William, Lake Superior and Fort Alexander, at the mouth of the Winipeg River.

Section 2.

Geological sketch of Red River valley, from the 49th Parallel to Lake Winipeg.

Section 3.

Economic materials met with during the explorations. To be accompanied with a Geological Map of the country traversed, on a scale of 10 miles to 1 inch. Also cross sections of the river and swamps at Red River Settlement, and sections of strata on the route. To be furnished by the 20th January, 1858.

PART III.

Section 1.

Industrial and social condition of the inhabitants of Red River valley, north of the 49th parallel, and of the valley of the Assiniboine, as far as the limits of settlements at Prairie Portage, comprising

1. Statistics of population.
2. " " industry.
3. Habits and customs.
4. Religion.
5. Education.
6. Trade and commerce.

Section 2.

Climate of Red River valley north of 49th Parallel.

Section 3.

Application and neglect of resources of Red River valley. To be accompanied with sketches of the principal buildings in the settlement, &c., &c., and to be furnished by January 30th, 1858.

PART. IV.

A daily journal, containing observations in natural history and meteorology, with notes on the different tribes of Indians seen and visited, together with a record of other subjects of interest receiving attention during the exploration and the homeward route to St. Paul.

In writing my journal, I have frequently made memoranda for future study or reference, when within reach of proper sources of information. These may require a longer time than I am at present aware of. And in view of the labor involved in preparing the topographical and geological reports, I beg permission to name four months from the time of my arrival in Toronto, as the limit within which this part of my report will be prepared for your inspection. I propose to accompany the journal with sketches of the Hudson's Bay Company's Forts on the route of exploration. The chief waterfalls, outlines of scenery, and sketches of implements of husbandry, &c., &c., used by the people of Red River.

I am compelled to remain for two or three days at St. Paul until the arrival of my baggage from Crow Wing, but I hope to be in Toronto on Thursday or Friday next, (the 4th and 5th of November).

I have the honor to be
Your obedient servant,
HENRY YOULE HIND, M. A.,
Geologist and Naturalist Red River Exploring Expedition.

The Honorable
The Provincial Secretary,
Toronto, Canada.

ROSSIN HOUSE, TORONTO,
5th December, 1856.

Memorandum in reference to Professor Hind's remarks, in his letter to the Rev. Robert McDonald, dated Fort Garry, Tuesday, 8th Sept., 1857, which have only now come under my notice.

On Saturday evening, Sept. 5, as the canoes were ascending the Red River, I landed at my daughter's house, which is five or six miles distant from Fort Garry, and remained there for the night. The gentlemen of the expedition party being directed to proceed on with the canoes and encamp near the Fort. On Sunday morning at nearly 11 o'clock, Mr. Wells, (Mr. Dawsons Chief Assistant,) called on me (he was on horseback) with a note sent by Mr. Dawson, and acquainting me with the Professor's arrival at Fort Garry the previous night. Mr. Wells was immediately directed to procure at the Company's Fort, if to be had, all the items which he named to me as being considered necessary for Mr. Dawson, and to prepare a canoe to start as soon as possible with those supplies, intimating at the same time my doubts whether the canoemen, just come off a long voyage, could be prevailed on to leave the settlement so soon, particularly on Sunday.

I was at the Fort at 10 o'clock on Monday, when I consulted Dr. Bunn, the Company's medical officer, who considered it unsafe to send medicines without seeing the patient, and having a better knowledge of the true nature of the case.

I then went to the camp, and found that Mr. Wells, Prof. Hind and Mr. Napier, had one and all declined to assume the responsibility of sending off the canoe. I again directed Mr. Wells to have the canoe prepared, pointed out the men to be sent, and ordered the requisite provisions for them; but notwithstanding these repeated directions, it was late on Tuesday morning before the canoe, under the conduct of Mr. Gaudet, (another of Mr. Dawson's staff,) was ready, and took his departure from the fort. The detention, as regarded the men, I found to be caused by their having occasion for shoe-leather and clothing out of the Company's shop, and which they could not obtain elsewhere, particularly on Sunday.

The Professor does not say that he considered the crisis of Mr. Dawson's illness to have passed before he left him, although I observe he expresses to Mr. McDonald "a hope that Mr. Dawson is fast recovering." Neither does he say it was expected that Mr. Gaudet would meet Mr. Dawson on his way to the settlement.

It is unnecessary to make further remark on this matter except to say it required no "effort" to see me as I was at no greater distance than Dr. Bunn's consultation room, within half a minute's walk of the expedition camp, and that I do not clearly see how I could have been "repeatedly urged" upon the necessities of the case by Messrs. Napier, Wells, Gaudet and others! if, as the Professor says, I could not be found.

Geo. Gladman.

Rossin House,
Monday, 7th Dec., 1857.

Sir,—I beg to return thanks for the perusal of the reports relative to the Red River expedition, which were kindly placed in my hands on Saturday, and beg further to draw attention to the remarks made by me in the margin.

I remain, &c., &c.,
Geo. Gladman.

To Edmund A. Meredith, Esq.,
Assistant Provincial Secretary West, &c.

Port Hope, 7th Dec., 1857.

Sir,—I have the success of the scheme for opening out communications with the Red River settlement so much at heart, that although I know your time, at this particular juncture, is fully occupied in making arrangements of more immediate importance, I cannot refrain from addressing you a few words, called for in my opinion by the circumstances in which we, of the Red River expedition, are placed.

In the first place, I beg to represent the necessity of sending a trust-worthy messenger to the Red River Settlement as soon as possible, with remittances and with instructions to Messrs. Napier and Dawson for their future guidance.

As preparations require to be made during the winter for successfully carrying through the works of the next year on the line of communication, I beg further to say, I am prepared to undertake the task of making the Portage Roads, and improving all the water courses between Lake Superior and Red River, provided I am allowed to select my own staff of working assistants, and that sufficient means are placed at my disposal; also, that I have power and authority, as an agent of Government to treat with the Indians for the surrender and occupation of such lands as may be needful for the purposes in view.

I would suggest that arrangements be immediately made for a supply of boats adapted to the navigation of shallow waters. Such boats to be ready for delivery at Fort William, on Lake Superior, early in May next. That provisions and other supplies for the use of the parties now employed and for those hereafter to be engaged, be prepared during the winter, in packages adapted for the carrying over the portages, and that foremen and men accustomed to road making and bush work be sought out during the winter, and engaged in the spring for active service.

It is very desirable that all the lands between Fort William and the Mountain Portage should be surveyed and lotted out, and, as an inducement to its being immediately occupied by immigrants, that the system of free grants should be extensively acted upon. The soil on the banks of the river appears to be tolerably fertile, and although wheat has not been raised there, in consequence of all the present cleared lands being too much exposed to the fogs of Lake Supeaior, it is scarcely doubted that grain may be cultivated with success on lands but a short distancce from the lake, when the country is laid open. Looking at all the sites north of the frontier line at Pigeon River, this appears to me the nearest and most eligible place for forming an extensive settlement, and when such settlement is formed it will aid very much in filling up the whole of the interior country wherever advantageous locations can be found.

A monthly mail would be a great boon to the Red River population, and can very easily be carried by canoe from post to post during the summer season.

In the winter the carriage of Mails would be difficult and interrupted, except it were undertaken by the officers of the Hudson's Bay Company stationed on the north shore of Lake Superior. The expense would not be very heavy, indeed my impression is it would nearly if not entirely be defrayed by the postage on letters and newspapers.

I have deferred sending in the Report which I had prepared on the 3rd ultimo, immediately after my return to Toronto, under the expectation of receiving the reports of the gentlemen who accompanied me on the Expedition. I have now been favored with the perusal of the Reports forwarded by those gentlemen to the several Departments, and beg reference more especially to that of Professor Hind, who best describes the general features and products of the country through which we passed.

I have the honor to remain, Sir,
Your obedient humble servant,
GEO. GLADMAN.

To the Honorable,
The Provincial Secretary, Toronto.

TORONTO, 3rd November, 1857.

SIR,—On the 8th September I had the honor to address you from Fort Garry, Red River Settlement, acquainting you with the progress of the Expedition party under my direction; our several positions at that time, and my views in regard to operations during the winter season.

I delayed my departure from the Settlement until the 15th September, hoping that Mr. Dawson's health would have been so far re-established as to admit of his re-joining us at that date. Unfortunately however, this was not the case, as on the 21st I found that gentleman yet confined to his bed, at the Islington Mission Station, and entirely unable to discuss with me the affairs of the expedition. Mr. Gaudet, who had been sent from the Red River in a large canoe, with supplies of provisions, and with instructions to remove Mr. Dawson as soon as possible within reach of medical assistance at the settlement, was at the station awaiting his convalescence. All anxiety concerning Mr. Dawson is now happily removed, as Professor Hind brings information that he (Mr. Dawson) had reached the Settlement, and that there was every prospect of his restoration to perfect health in a short time.

I beg to annex copies of the letters addressed by me to Messrs. Napier and Dawson, before I left the Red River Settlement, relative to the affairs of the expedition.

On the 27th September I arrived at Rainy Lake on my return towards Canada. Here I met again with exceedingly contradictory reports respecting the chain of rivers and lakes forming the water communication with Lake Superior, on the route followed by the North West Company of Canada previous to the year 1803. Having passed several times over the Kaministiquia Route, and our party having obtained a knowledge of all the difficulties and obstructions presented on that line, I determined on a personal examination of this "Old North West Route," in order to arrive at some conclusion that would be more satisfactory than any to be deduced from the information I had hitherto obtained.

I accordingly engaged an Indian guide, and leaving Rainy Lake on the 30th September branched off on the Namakun Lake, at the point where the Northern and Southern lines of routes separate. Thence to the lake Seiganagock, which I reached on the evening of the 3rd October. I found the whole line of communication to be very good indeed, being a succession of small lakes connected by small streams and sixteen short portages, all easily improved, and which on the aggregate do not occasion much more than two miles of land carriage.

Between the Lake Seiganagock and the shore of Lake Superior, where I arrived on the afternoon of the 7th October, we encountered the chief difficulties and obstructions that are met with on this route.

The height of land, dividing the waters which flow into Lake Superior from those which run towards Lake Winipeg and Hudson's Bay, is short and steep, the small streams exceedingly shallow, and the seventeen portages over which we passed are long, rugged and hilly, amounting on the whole to about sixteen miles of land carriage.

In a direct line, the distance from Lake Seiganagock to Lake Superior appears by the Map to be about 40 or 45 miles, passing over United States territory. From the same point to the Kaministiquia River the distance is about 60 miles. Here the country is so imperfectly known that we cannot form any opinion whether a communication is practicable either by water or land, and I regret exceedingly that the season was too far spent to admit of my determining this interesting point. As far as I can learn from the Indians who hunt over that part of the country, there are lakes and rivers which may be made available as channels of communication, and to these it is very desirable we should direct our first attention in commencing the work of next summer. In the meanwhile I have instructed my son and assistant, Henry Gladman, whom I left at Fort William for that purpose, to explore during the winter, as far as may be practicable, the whole tract of country between the Seiganagock and Dog Lake. We shall thus be fully prepared, in the month of May next, to commence the active work of opening out this part of the road in the direction that may be deemed most suitable; and that work will be very much facilitated by the previous knowledge of the country which we shall have obtained.

The whole difficulty at the eastern end of the line of communication, lies within the compass of a few miles, and in my opinion a choice is to be made between a road of about 18 or 20 miles, (that is to say, from Lake Superior to Dog Lake, and a road to the Sagenagack or Arrow Lake, the length of which is not at present known to us,) and in fact can only be ascertained by a careful examination.

Having casually heard that a road had been commenced recently, between the shores of Lake Superior and "Saxton," and the head waters of the Pigeon River, I thought it advisable to gain some certain knowledge on this point. I accordingly directed my course thither, and landing at Saxton on the 17th October, found a small party there, clearing land, but there was no appearance of any road making. I am since assured such a work is in contemplation, and will be undertaken next year.

The season being very far advanced and the weather becoming more and more tempestuous, I proceeded from Saxton to Superior City, and there taking advantage of a propeller bound to Cleveland, I embarked on the 23rd October, with the whole of my party, for Detroit, and arrived at Toronto on the morning of the 28th.

The detailed reports, plans, and sections to be furnished by the gentlemen who have accompanied me on this expedition, will shew that the whole chain of rivers and lakes between Fort William, on Lake Superior, and Fort Garry, on Red River, following the Kaministiquia route as indicated by my letter of instructions, has been as fully surveyed as the season and circumstances permitted. Time did not admit of so complete an examination as we could have wished, nevertheless much information has been acquired that will be useful in carrying on the operations of next year.

Upon reviewing the Kaministiquia route, the impression on my mind is, that to make it available for the purposes of commercial communication and colonization, the most feasible plan of operations will be to make a road from the "Current River" on the shores of Lake Superior to the Dog Portage, thus avoiding the shallow and circuitous waters of the "Kaministiquia," with all its numerous falls and portages; thence improve the Portage Road and streams as far as Rainy Lake; then make a road from the Lake of the Woods to the Red River instead of passing by the Winnipeg River. So far as we know at present this latter road will be from 90 to 100 miles in length, through a wooded country for the greater part of that distance, but on these points information will be given during the winter by the gentlemen whom I have left at Red River for the purpose of fully exploring that large tract, and early in spring they will be prepared to follow any course that may be directed by instructions from Toronto.

The inhabitants of the Red River settlement feel so much interested in opening out this road of communication, that I am well assured they will promptly assist, as soon as the direction of the line is determined upon. Many of them have passed frequently over the tract, and their information and co-operation will be exceedingly valuable.

In our intercourse with the Indians who hunt over the country adjacent to the "Rainy Lake" and "Lake of the Woods," we have found them very unwilling to afford correct information respecting it. They are strongly opposed to any colonial settlement on their lands, and look with distrust on the movements of surveying parties, whose operations they apprehend will result in the total extinction of their native claims, and the loss and destruction of their fisheries. We experienced this feeling of opposition in the case of the small party which I detached at Fort Francis with instruction to proceed by the Red River to Fort Garry. The guide whom I had engaged to accompany the gentlemen sent on that service, instead of directing the route along the shore of the "Lake of the Woods" to the entrance of the "Red River," as he should have done, led the party to the "Plantation Island," where he well knew there was a large encampment of his own people. Arrived there the guide at once quitted the party. Messrs. Dawson and Hind found it impossible to engage another to take his place, and were consequently obliged to relinquish the object for which they had been detached. It appears to me that in following out the proposed plan of opening out this road of communication it will be necessary to treat with the Indians for the disposal of that portion of their land which lies in the line of route. I do not apprehend there would be any difficulty in making an arrangement when the objects which the Government have in view are clearly understood; but it will be requisite that full explanations be given, and such a treaty made as will prevent all opposition or collision hereafter. That it is in their power to interrupt any chain of communication that may be formed cannot be doubted, and as they have already shewn themselves to be exceedingly tenacious of their right of soil, I am of opinion our only course will be to make an amicable arrangement with them, by which free commercial intercourse with the Red River settlement may be permanently secured. They raise no objection whatever to parties passing by the Winipeg or the Rainy Rivers, these, as themselves say, are open to every one, but the occupation or possession of the soil, without previous treaty or agreement, and without any view of establishing a trade with them, is what they are most decidedly opposed to.

With reference to the future course of the expedition party which the Government did me the honor to place under my direction, both Mr. Napier and Mr. Dawson having received their instructions, under seal, direct from the Governmental Departments to which they were respectively considered as attached, and their reports having been transmitted in like manner to the several offices for which those instructions were issued, I do not see how I can efficiently direct or control those operations, or how any benefit can accrue to the expedition from my being only nominally at its head. Nevertheless, I feel it incumbent on me to say that some steps require to be immediately taken, to meet the expenses of the eight gentlemen left by me on the Red River Settlement with the view of continuing the exploration during both winter and spring, and of the one gentleman left at Fort William for a similar object. Contracts and arrangements were made by me for the supply of a quantity of provisions sufficient for the winter use of the several parties, but a remittance of funds to cover the amount of those expenses is indispensable.

I have the honor to remain, Sir,
Your obedient humble servant,
(Signed,) GEO. GLADMAN.

FORT GARRY, RED RIVER SETTLEMENT,
September 10th, 1857.

SIR,—Being now about to return to Toronto by canoe, I, in accordance with my instructions, beg to direct your attention to the examination of the country that lies between the Red River and the Lake of the Woods, as far south as the British boundary admits.

I have been informed that there is a line of farm land on which a good cart road may be made, and that there is a good water communication for small canoes at a certain season, (between the points I have indicated) but the statements made to me are so conflicting and contradictory that nothing but actual exploration can determine whether these things be so or not.

I am persuaded that both yourself and Mr. Dawson will see the importance of determining these points, and that on consultation together, when his health is re-established, you will act with entire unanimity, and carry the exploration to a satisfactory result.

On the opening of the navigation in spring, you will be able to continue your surveys eastward towards Rainy Lake. I anticipate you will there find all requisite supplies for after operations about the 25th June or 1st July: but on this point you will most probably receive, in the interim, full instructions from the Canadian Government.

Having at length succeeded in renting houses for your accommodation, and in making contracts for the provisions you require until June next, I leave the settlement under the full conviction that everything will be done by you that is possible, to accomplish the ends the Government had in view in sending out the expedition.

Wishing you health and success,
I remain, Sir,
Your obdt. humble servant,
GEO. GLADMAN.

W. H. E. Napier, Esq.

FORT GARRY, RED RIVER SETTLEMENT,
12th September, 1857.

SIR,—Since you left here, Mr. McTavish, for reasons which it is not necessary I should mention, considers it would be better that whatever cash I have to leave for the expedition, should be in the hands of yourself or Mr. Dawson.

If the money I leave with you should be insufficient to meet your wants before you receive remittances from Canada, Mr. McTavish is kind enough to say he will assist the expedition with funds, as far as lies in his power, until such time as your own shall arrive. This is the only arrangement I can make at the present moment, and will, I am persuaded, meet all the requirements of the expedition.

The best men of the settlement being absent in the boats on the York factory voyage, I would recommend that none be engaged until they arrive. Wages here, in the winter season, are very moderate, say from £3 sterling per month upwards to £5 sterling. It therefore appears to me, you would do well to be in no haste to engage men, but occupy the present time in delineating the work already done between Fort William and this place, and in preparing the reports and plans which it is requisite should be sent to the Government by the hands of Professor Hind.

I also recommend that you send a list of all such supplies as you may think will be required to be forwarded from Canada to Rainy Lake next spring; and that you keep regular and accurate accounts of the expenses of the expedition in the settlement.

I shall engage a canoe builder to make canoes at Rainy Lake; in the mean time, I leave you one of the "north canoes," which we had on the voyage, and a small canoe brought here by Professor Hind. If more are required, you will probably obtain them from the Indians at the Indian settlement.

Mr. John Rowand has engaged to give the expedition the use of four horses as long as may be required.

Dogs and appointments for winter travel, can only be obtained at a later period in the year.

I enclose a copy of the list of provisions, &c., which Mr. McDermot has engaged to furnish the expedition. This, however, does not include what you may require for extra men, or for your voyage to Rainy Lake, in June, such as hams, pork, biscuit, &c. I therefore recommend that you make an early estimate, and endeavour to have them on hand, so that you may experience no inconvenience for want of supplies in May or June.

Provisions of all kinds being at the present moment held back throughout the settlement, in expectation of the arrival of of the troops, allow me to recommend economy in your expenditure.

I remain, Sir,
Your obdt. servant,
Geo. Gladman.

W. H. E. Napier, Esq.

[Memorandum for Mr. Henry Gladman at Fort William.]

Endeavour to ascertain the precise character of the country between the mouth of the Current River and Dog Portage, and from Point Meuron to the same place. Go over the ground, and see whether a cart road can be made from one point or the other, or from both.

Also, the character of the country from Point Meuron (or thereabout) to "Whitefish Lake," and whether any communication can be opened so as to fall in upon the old northwest route above the Grand Portage, or beyond the height of land.

In the spring, when snow-shoe travel is good, endeavour to ascertain what the track is from Lake Superior to Arrow Lake, and whether a cart road can be made there or not.

If Fort William people can be engaged, square wood for repairing the Swampy Portage.

If the season permits, clear and widen the Portage road in the Kaministiquia, and enlarge the landing places. The spring of the year will be the best time for this work.

More particular instructions will be sent by the earliest mail from Toronto.

Fort William, 13th October, 1858.

FORT GARRY, RED RIVER SETTLEMENT,
December 8th, 1857.

SIR,—I have the honor to submit the following report upon the Hudson's Bay canoe route from Fort William, Lake Superior, to the Red River Settlement, together with accompanying plans and sections.

The plans have been projected from track survey, delineating the features of the rivers, lakes, and creeks followed, their relative positions and the obstructions which occur in each, from which it is hoped a sufficient idea of the route, and its suitableness or otherwise for improvement, may be formed, upon which to base future operations.

The sections have been plotted from actual levels taken at all the principal breaks, and from careful estimates made of the rapids and currents, shewing the heights of the different waters followed, above the datum of Lake Superior.

The route may be divided into three sections :

1st. From Lake Superior to the entrance of Rainy Lake, embracing the Kaministiquia River to the height of land and the chain of lakes and rivers flowing into Rainy Lake.

2nd. The Rainy Lake, Rainy River, and the Lake of the Woods to Rat Portage.

3rd. The Winipeg River, Winipeg Lake, and Red River to Fort Garry at the mouth of the Assiniboine.

The Kaminstiquia River is the first link in the canoe route between Fort William and the Red River. Rising in the vast region of swamp about the height of land which divides the waters flowing from Hudson's Bay from those tributary to Lake Superior, it has a general downward bearing of south by east, and for a distance of 43 miles from its mouth is exceedingly tortuous and broken by numerous falls, rapids, and shallows. It empties into the south-west angle of Thunder Bay, with a delta at its mouth, upon the northerly channel of which, and one mile from the lake, is situated Fort William, a post of the Hudson's Bay Company. The mouth of the river is surrounded by a narrow bar where only 5 feet of water is found.

From Fort William the river is sluggish and meandering, with width of 5 chains, and an average depth of 6 feet for a distance of 12 miles. At this point the rapid water commences, and continues to the foot of the Grand Falls Portage, a distance of 25.5 miles from the mouth. In ascending the river in canoes, these rapids are only overcome by poling, and the depth of water at these points (August 6th) did not exceed 2 feet, with rocky bottom.

The first regular portage is made passing the Kakabeka Falls of 119 feet. It is 4 chains in length, rising abruptly from the water to a table land, which continues to the head of the portage. From this point to Little Dog Lake, there are nineteen falls and rapids. The falls are passed by portages, none of which, however, exceed 8 chains in length. The rapids are here also ascended by poling the canoes or towing with a line from the shore.

The Little Dog Lake at the foot of Great Dog Portage has an elevation of 360.8 feet above Lake Superior in a distance of 44.5 miles by the river. The country between this point and Fort William, to the north of the Kamanistiquia, does not present any formidable obstacles to the construction of a road which, in a tolerably direct line would reduce the distance by water one-third, and a great portion of the country in the neighborhood of Fort William is available for settlement.

The Great Dog Portage leads from the Little Dog Lake to the Great Dog Lake and is 1 mile and 52 chains in length; it has an elevation at its summit of 502 feet over the Little Dog. The river connecting these lakes bends away to the south of the portage road, and is one succession of cascades through rocky cliffs, with a total fall of 348 feet.

The Great Dog Lake is an extensive sheet of water, 708 feet above Lake Superior, and is followed by the canoe route for 8 miles to the mouth of Dog River. The Dog River has a general width of 3 chains, and winds sluggishly through a low swampy country timbered with poplar pitch pine and tamarack. For a distance of 25 miles from the lake, the river, upon August 8th, maintained an average depth of 4 feet water, with mud bottom and banks. A small rapid of 3 feet fall here occurs, which is poled up, the baggage being portaged 3 chains.

The country becomes then more elevated to the north with a larger growth of timber. At 27 miles from the Dog Lake is the Portage du Jordain, of 8.60 feet fall, and 6½ chains in length. Above this fall the river resumes its sluggish character, until left by the canoe route, 30 miles from its mouth, where a small winding creek, a branch of the Dog River, is entered, bearing away to the south-west. The average width of this branch is 10 feet, with a depth of 2 feet; it is followed for 2 miles, when a small lake is entered, the source of this creek. The shores of the creek and lake are low and marshy. At the western extremity of this small lake, is the Portage de

L'eau Froide, of 3 chains in length, leading to another small lake or pond at the foot of the Prairie Portage.

The Prairie Portage of 2 miles and 5 chains forms the height of land, and is 887 feet above the water of Lake Superior. It is high and level with sandy soil. The timber has all been destroyed by fire, and appears to have been spruce and little pine. A small lake of about $\frac{1}{4}$ of a mile in width forms the western extremity of this portage, and is the highest water level, from which the route now commences to descend in a westerly direction.

The Portage du Milieu upon the opposite shore of this lake is 39 chains long: marshy at its approach, it rises in its centre, falling again at its western end, the Lac du Milieu, which is one mile long, and leads to the foot of Great Savanne Portage. The shores of this lake are low, timbered with spruce and tamarack.

The Great Savanne Portage is one mile and 41 chains in length, through a low tamarack swamp. It is considered one of the worst portages on the route. In the days of the North-West Company, when the route was a thoroughfare and the outlet for the fur trade, this portage had been made passable by a pathway of longitudinal timbers; at present, however, these are in a state of dilapidation, and partially buried in the mire, serving only as stumbling blocks to the voyageurs staggering through under a load. There is abundance of timber in the neighborhood, with which at trifling labor or cost a new roadway could be laid, and also sufficient fall to afford drainage into the Rivière d'Embarras, its western termination.

Leaving the Savanne Portage, the canoe route now follows down the Rivière d'Embarras or Savanne River for a distance of 20 miles to its entrance into the Mille Lac or Lake of a Thousand Islands.

This river has an average width of 3 chains, and a depth of 4 feet water, but is in many parts almost impassable from the quantity of driftwood which has accumulated from time to time; this could, however, be removed with little difficulty, where the river would form a navigable reach in connection with the Mille Lacs. The banks of the Rivière D'Embarras are muddy and low, timbered with pitch pine, spruce, and birch, much of which has, however, suffered from the ravages of fire.

From the mouth of Rivière D'Embarras, at the Lake of the Thousand Islands, forms a navigable reach of 23 miles by the canoe route to the portage du Baril, where it is left. It is an extensive sheet of water, stretched away to the north some 30 miles to its outlet; its shores are rocky, timbered with pine, spruce, birch, and poplar.

The Portage du Baril of 17 chains over a rocky ridge, leads to the Lake du Baril, which is 7 miles in length; it has a good depth of water, the shores rocky and rolling, timbered with pine and spruce. The Lac du Baril is left by the Brulé Portage of 21 chains, which terminates upon the Cannibal Head, a chain of small lakes with short intervening narrows, some of which are shoal. These lakes discharge by a small creek from which the French Portage is made. The creek falls into the Lake Francis, the Western end of French Portage, and at high water is navigable throughout. It is, however, much obstructed by small rapids and driftwood. The French Portage is one mile and 60 chains in length, over a succession of rocky ridges, with intervening swampy bottoms, and is accounted one of the most difficult portages on the route. Leaving the French Portage, there is a reach of 11 miles to the Portage des Morts, interrupted only by two short narrows where but three feet water is found. The Portage des Morts is 26 chains in length, and is rocky and uneven. Crossing the Doré Dalle Lake, the Portage des Deux Rivières is made, 26 chains in length, and having a fall of 117 feet to a creek at its western extremity; this creek is only one chain in width, but deep, and leads into the two Sturgeon Lakes, where a navigable reach of 16 miles occurs.

Sturgeon River now forms the next link in the route. Immediately at its mouth is a rapid of 4 feet fall, passed by a discharge of 11 chains; a few chains of still water and second rapid, of 621 feet fall, are passed by a portage of 3 chains.

Continuing on down the Sturgeon River, 5 small rapids are passed in the next seven miles, having in all a fall of 11 feet. Jauner Rapid, also called Mininis Falls, next calls for a portage, which is five chains in length; the river now becomes wider, with strong current, for 4½ miles to the Island Portage of 2 chains, passing a chute of 10 feet. Narrows of 2 chains and 4 feet water occur at the mouth of Sturgeon River, which falls into Pine Lake, a deep reach of 6½ miles, discharging into the Macan River.

Continuing down the Macan River, the route is next interrupted by the Snake Portage, of 5 chains, and a fall of 12 feet; the river here has a width of 4 chains and a current of 2 miles per hour.

Three miles below the Snake Falls is the Crow Portage, of 9 chains, made on an island below which the river is broken by short rapids and shoals, where 2 feet of water only is found. The grand falls of the Macan occur — miles below the Crow Portage, and are the largest upon the river, being 16 feet perpendicular height. The approach to the portage from above is exceedingly dangerous, being made by the immediate head of the fall; it is 6 chains in length, rocky and uneven. Two miles below the grand falls are the long rapids, a succession of pitches and broken water one mile in length, and having a total fall of 10 feet. These rapids are run by experienced canoe men, but are dangerous at low water; the shores are low, rocky, and timbered with a small growth of spruce and poplar.

The Macan continues about 4 chains in width, and has a good depth of water for two miles to the Nameaukan Rapids, the last on the river; these rapids are 15 chains in length, with a fall of 7 feet, and are run but considered unsafe except at high water; the shores are rocky but level.

The route now follows the Macan for 2 miles, where the Nameaukan Lake is entered, skirting along the north shore of which for 6½ miles, we come to the Portages Nie, two in Nimsku, avoiding a detour to the South by which the Nameaukan Lake discharges itself in the Rainy Lake. The first portage nie is 6 chains in length, at the end of which a fall of 8.5 feet to a pond of 10 chains in length, at the end of which the 2nd portage of 11 chains leads to the entrance of the Rainy Lake.

The Rainy Lake now affords 35 miles of uninterrupted navigation to the mouth of the Rainy River, its outlet; it is an expansive sheet of water, studded with numerous islands, affording good shelter, and throughout its length there is a good depth of water.

Immediately at the mouth of Rainy River is a small rapid which is run by canoes, and three miles further down are the Chaudière Falls, of 22 feet, with a portage upon the British side of 8 chains.

Opposite these falls and situated upon a high bank, is Fort Francis, a post of the Hudson's Bay Company.

From Fort Francis I made an exploration of the northerly route from the North-west angle of the Rainy Lake to the Rat Portage.

This is the winter road, and is preferred to the route by the Rainy River, as being more sheltered and free from the long open traverses necessary in crossing to the Rat Portage from the mouth of Rainy River. From Rainy Lake this road follows a chain of small lakes and connecting creeks, with occasional portages, until the north-east corner of the Lake of the Woods is reached where the route continues through the numerous islands on the Rat Portage. The land throughout is rugged, rocky, and timbered with spruce and birch. A sketch of this exploration is shewn on the plan accompanying.

The Rainy River is a fine stream, with an average width of 7 chains, affording an unembarrassed navigation for a distance of 31 miles from Fort Francis, where a small rapid occurs of 2½ feet fall, and 7 miles further down another of 3 feet; these are the only interruptions to its course for a distance of 73 miles from Fort Francis to the Lake of the Woods. These rapids are caused by a contraction of the banks of the river, and could with little difficulty be removed. At present they are run by canoes, and have a fair depth of water.

The banks of the Rainy River are about 15 feet above the water, timbered with poplar and white birch; the soil is sandy clay, which is reported to extend back from the river for a distance of 10 miles.

The canoe route now continues through the Islands in the Lake of the Woods for a distance, from the mouth of Rainy River to the Rat Portage, of 64 miles. There is here a fall of 16 feet where the Lake of the Woods discharges by several channels into the Winipeg River, and a portage is made of 13 chains over a rock, at the foot of which is the Hudson's Bay Company's Post. The Winipeg River from the Rat Portage is wide, and bears more the appearance of a lake, being full of islands, but at nine miles it contracts to narrows, where the first rapid, the Dalles of 3 feet fall are run.

Below these rapids the river again resumes its lake-like appearance for 18 miles, to the second rapid of 5.5 feet, which are portaged, the canoes running light. The Yellow Mud Falls of 22 feet is next portaged 5 chains, followed by a heavy pitch at its foot of 7 feet, and ¾ of a mile further down in the River Portage of 10 chains passing a fall of 8 feet. A small rapid next occurs called the Cove, of 4 feet fall, which is run; and 3 miles lower down is the missionary station, Islington, about which 50 acres of land is under cultivation. To this point the shores of the Winipeg are rocky, barren, and covered only with a small growth of pine, spruce and poplar timber.

Continuing down the river from Islington 13 miles, is the De L'Isle Rapid, of 3.4 inch fall, with a short portage of 3 chains. The De L'Isle is sometimes run, but is accounted dangerous from the heavy eddies at its foot.

To the Jocho Chute (a distance of 21 miles) the river is navigable with a current of variable space; the Chute of Jocho is 13 feet, and the portage 5 chains over a bare rock. With the exception of one small rapid of 1 foot, the river continues a distance of 7 miles unbroken water to the head of the 3 Points de Bois falls of 38 feet in 1¼ miles, passed by a portage. The second portage is made from the immediate head of the fall, and is exceedingly dangerous to approach from above.

The river continues with an average width of 15 chains for 3.5 miles, when Slave Falls of 19.80 feet are portaged 30 chains.

Leaving the foot of the Slave Falls (a reach of 6 miles) brings us to the Barrière Chute of 5 feet, which is portaged 3 chains, below which the current becomes very strong for a distance of 6 miles, where the Otter Falls of 3 feet are run in descending the river.

At the foot of the Otter Falls, the Pinewa, a small branch of the Winipeg, leads off to the north into the Lac de Bonnet. This branch is often used at high water in preference to the main river, as it is less obstructed by falls and has fewer portages; but when the water is low it is impassable for large canoes, which continue down the main river, here called la Rivière Blanche.

The Sept Portages (3 miles below the mouth of the Pinewa,) form the most dangerous and difficult portion of the Winipeg River. With a total fall of 47.26 feet in a distance of about 2 miles, these portages are only passed with great caution. Owing to carelessness on the part of one of the guides, two canoes of this expedition were in imminent danger of being precipitated over these falls.

The river below the Sept Portages widens gradually into the Lac de Bonnets, which forms a navigable reach of 11½ miles to its discharge, where a chute of 7.30 feet, called the 1st Gala de Bonnet, occurs, and is portaged 2 chains over a rock. The 2nd Gala de Bonnets, of 5 feet fall and 4 chains portage next follows; and three miles further down is the Grand Bonnet, of 34 feet fall, with a land portage of 51 chains. The Petit Roche de Bonnet, of 8.25 feet fall, passed by a portage of 3 chains, next occurs, 1 mile below the last; and three miles lower down are the White Mud Falls, of 13 feet, portaged 15 chains. Continuing on for 4.5 miles, we come to the Silver Falls (two in number,) of 21.5 feet, and avoided by a portage of 23 chains.

The river has now a strong current for 4.5 miles to the Pine Falls, the last portage in the river, of 12 chains, with a fall of 8.35 feet. Below the Pine Falls the river becomes wider and a moderate current to Fort Alexander, 5 miles below the Falls, where the current ceases: two miles below Fort Alexander the river enters the Lake.

The portages upon the Winipeg are all well cut out, being used regularly by the Hudson's Bay Company in bringing up their boats from York Factory with the supplies for their posts upon Lac la Pluie, Lac de Poisson Blanc, and the Rat Portage, but many of them are extremely dangerous to approach. The boats used throughout this part of the country by the Company are 30 feet long, with a light draft of water, and particularly adapted to the broken navigation of these waters, carrying loads of from 2½ to 5 tons.

The land upon the banks of the Winipeg gradually improves after we leave the Silver Falls, and in the neighbourhood of Fort Alexander, about the mouth of the river, the soil appears of excellent quality.

Coasting along the south shore of Lake Winipeg, the canoe route enters the mouth of the Red River through an immense marsh, the river continues without any perceptible current, for 19 miles, to the stone fort or lower Fort Garry; and 4 miles above the fort are the Grand Rapids, of about 1 foot fall and 2 feet water: 22 miles from the stone fort is upper Fort Garry, situated at the confluence of the Assiniboine and Red Rivers.

The total distance from Lake Superior to Fort Garry, by the canoe route, I estimate at 647 miles, viz:

From Superior to the entrance to Rainy Lake....	335
East end of Rainy Lake to the Rat Portage......	176
Rat Portage to Fort Garry....................	236
	647

From the foregoing, it will be perceived that the main difficulties are encountered upon that portion of the route between Lake Superior and the Rainy Lake.

The formidable ascent from Lake Superior to the Dog Lake, by the Kaministiquia, and the broken character of the country about the height of land, points to the necessity of adopting a communication by road, the most favorable portion for which remains to be determined by further exploration. Many of the waters followed by the canoe route from the height of land to Rainy Lake (such as the Mille Lacs, the Cannibal Head, 2 Sturgeon, and Pine Lakes) afford long reaches of navigation in the line of direction required, but their connecting streams are for the most part tortuous, and impeded by rapids and shoals.

To determine the most eligible line of communication through this section, a thorough examination of the country between Fort William and the Rainy Lake would be requisite both by the north and South of the Canoe Route.

No reliable information could be obtained as to the nature of the adjoining country, as little is known of it; the route itself is seldom traversed as is evinced from the fact that the portages are for the most part completely grown up with brushwood and scarcely traceable.

The Rainy Lake, from its eastern extremity to its discharge by the Rainy River, forms an interrupted reach of deep navigation. In the Rainy River but one break may be said to occur, viz., the Chaudière Falls, near Fort Francis.

The small rapids occurring below are merely swift runs below caused by the contraction of the banks, and as both have a good depth of water they present no impediment to the navigation. The Lake of the Woods is navigable in all directions, and the numerous Islands form good shelter for vessels.

From the north west corner of the Lake of the Woods, a direct line cross the country to Fort Garry is estimated at 116 miles; this would avoid the long *detour* by the rapid and dangerous Winipeg River.

Although little is known of the nature of this country beyond a range of some 40 miles eastward from the Red River, still there is every reason to expect that a direct and easily constructed road can be formed through. A party is at present engaged in exploring a line through from Fort Garry, and further operations are to be carried out in that direction, as soon as the necessary equipment can be procured.

Leaving the distance from Lake Superior to Rainy Lake as estimated by the Canoe Route, the through distance will now appear as follows:

Lake Superior to Rainy Lake,…………	285	miles.
Rainy Lake to north west corner of Lake of the Woods, …………………………	151	"
Road from north west corner of Lake of of the Woods, to Red River,…………….	116	"
Making the total distance,…………………	502	

No examination of Pigeon River was possible last season, whether, therefore, attention is to be directed to that route in the spring or to the country between Rainy Lake and Fort William remains to be determined by further instructions.

Respectfully submitted.

I have the honor to be, Sir,
Your obedient servant,
(Signed,) W. H. E. Napier.

TABLE

SHEWING THE

HEIGHTS AND DISTANCES

OF THE DIFFERENT BREAKS WHICH OCCUR IN THE

HUDSON'S BAY CANOE ROUTE.

Table shewing the heights and distances of the different breaks which occur in the Hudson's Bay Canoe Route between Fort William, Lake Superior, and Fort Garry, Red River; also, their levels above the datum of Lake Superior, and distance established continuously from the mouth of the Kaministiquia River.

Name.	Number of		Height.	Length.	Reduced level.	Distance from Lake Superior.	Remarks.
	Portage.	Discharges.	′ ″	Ms. Chs.	′	Ms. Chs.	
Lake Superior	...	...	......	......	......	......	Mouth of the Kaministiquia River.
Point de Muron—Current	...	...	......	......	4·00	12·00	Navigable to this point. Rapids commence.
1st Rapid	...	...	2·50	......	6·50	......	Almost continuous Rapids. Poled up short intervening reaches of still water. The depth of water at the Rapids did not exceed from one to two feet.
Current to foot of 2nd Rapid	...	...	1·50	......	8·00	......	
2nd Rapid	...	...	3·00	......	11·00	......	
3rd Rapid	...	...	1·50	......	12·50	......	
4th Rapid	...	...	3·50	......	16·00	......	
5th Rapid	...	...	3·00	......	19·00	......	
6th Rapid	...	...	3·00	......	22·00	......	
7th Rapid	...	...	3·60	......	25·60	......	
8th Rapid	...	...	5·00	......	30·60	......	
9th Rapid	...	...	2·00	......	32·60	......	
10th Barrisseau—Semi-discharge	...	1	5·10	......	37·70	......	Portage about 15 chains. Canoes poled up light.
11th Rapid	...	...	2·00	......	39·70	......	Shoal water. Canoes poled all the way.
12th Rapid	...	...	2·50	......	42·20	......	
Current, 3 miles	...	...	1·50	......	43·70	......	
13th Rapid	...	...	6·00	......	49·70	......	
14th Rapid	...	...	3·50	......	53·20	25·53	Foot of Kakabeka Falls Portage.
Kakabeka Falls	1	...	119·05	·40	172·25	26·13	This includes the Rapids at the head of Falls.
Current to foot of Ecarté	...	...	·50	·10	172·75	26·23	
Ecarté Portage	2	...	62·65	·37	235·40	26·60	The Ecarté is a succession of Cascades. Very rough
Current to foot of Nicolet	...	...	1·50	2·70	236·90	29·50	[strong current. Deep water.
Nicolet Portage	3	...	6·59	·6	243·49	29·56	
Rapids	...	...	5·70	·50	249·19	30·26	Canoes towed up by line from shore.
Current to next Portage	...	...	0·50	·54	249·69	31·00	Canoes poled up. Shoal water.
Portage 3rd above Kakabeka	4	...	12·62	·8	262·31	31·08	Portage rough, rocky.
Do 4th do	5	...	6·90	·12	269·21	31·20	" "
Current to foot of Mokomaw	...	...	·25	·15	269·46	31·35	River two chains wide. Shores rocky.
Makomaw or Knife Portage	6	...	19·40	·5	288·86	31·40	Sharp rocks. Bad approaches.

Rapid	...	...	3·00	·7	291·86	31·47	Towed up. 150' wide.
Current	...	...	·25	·12	292·11	31·59	
Rapid	...	...	4·00	·3	296·11	31·62	Towed up.
Current	...	...	·25	·5	296·36	31·67	
Rapid	...	...	3·00	·3	299·36	31·70	3 chains wide. Towed up.
Current	...	...	·33	·30	299·69	32·20	3 chains wide.
Rapid	...	...	4·00	·3	303·69	32·23	Towed up.
Current	...	...	3.00	·61	306·69	33·04	Poled up.
Current to foot of Semi-discharge	...	...	·50	·15	307·19	33·19	"
Semi-discharge	...	2	3·00	·8	310·19	33·27	Baggage portaged. Canoes poled up light.
Current to next Rapid	...	...	2·00	1·23	312·19	34·50	Poled up.
Rapid	...	...	4·00	·4	316·19	34·54	2 chains wide.
Current	...	...	·50	2·00	316·69	36·54	Poled and paddled.
Rapid	...	...	3·50	·6	320·19	36·60	Poled.
Current	...	...	·25	·60	320 44	37·40	"
Rapid	...	...	1·50	·2	321·94	37·42	"
Current	...	...	·25	·26	322·19	37·68	"
Long Rapid	...	...	7·00	·40	329·19	38·28	Poled up. River 2 chains wide.
Current	...	...	2·00	·25	331·19	38·53	"
Current	...	...	1·00	·72	332·19	39·45	Long Bend. Poled up.
Rapid	...	...	3·00	·2	335·19	39·47	Poled up. 100 wide.
Current	...	...	·50	1·18	335·69	40·65	100 wide.
Rapid	...	...	3·00	·3	338·69	40·68	1 chain wide. Poled up.
To foot of Semi-discharge	...	...	......	·16	338·69	41·04	Still water.
Semi-discharge	...	3	3·50	·1	342·19	41·05	Short Portage. Canoes poled up.
To foot of Little Dog Falls	...	...	......	·19	342·19	41·24	Still reach. Paddled. End of poling.
Little Dog Portage	7	...	14·94	·4	357·13	41·28	Rocky bluffs. River 2 chains wide.
Current	...	...	·25	·5	357·38	41·33	River 2 chains wide.
Rapid	...	...	3·00	·5	360·38	41·38	Paddled up.
Current	...	...	·50	1·30	360·88	42·68	High shores. 300 wide.
Little Dog Lake	...	...	......	1·58	360·88	44·46	1½ miles wide. High shores. Rocky.
Great Dog Portage	8	...	347·81	1·54	708·69	46·20	Over high mountain. Sumit of portage 591, or Little [Dog.
Great Dog Lake	...	...	......	8·00	708.69	54·20	To mouth of Dog River.
Dog River Current	...	...	6·18	25·21	714·87	79·41	To foot of 1st Rapid. Current 3' per mile.
1st Rapid	...	...	1·00	·4	715·87	79·45	River 1 chain wide. 2 feet deep. Rocky bottom.
Current	...	...	·25	·20	716·12	79·65	1¼ wide.
Rapid, Semi-discharge	...	4	3·80	·1	719·92	79·66	High hills. River 2 chains wide.
Current	...	...	·50	1·45	720·42	81·31	
Portage du Jordain	9	...	8·60	·7	729·02	81.38	Rocky Chute.
Current to Portage de l'eau Froid	...	...	·25	3·14	729·27	84·52	Through narrow Creek and small Lakes. Marshy.
Portage de l'eau Froid	10	...	·76	·5	730·03	84·57	Into Lac de l'eau Froid.
Lac de l'eau Froid	...	...	......	·5	730·03	84·62	Lake 3' deep. Clean water. Temperature 40°.
Prairie Portage	11	...	157·12	2·50	887·15	87·32	Height of land. Sandy level.
Small Lake	...	...	......	·20	887·15	87·52	Highest water.
Portage de Milieu	12	...	16·39	·39	870·76	88·11	Descending.

Table shewing the heights and distances of the different breaks which occur in the Hudson's Bay Canoe Route, between Fort William, Lake Superior, and Fort Garry, Red River, &c.—(*Continued.*)

Name.	Number of		Height.	Length.	Reduced level.	Distance from Lake Superior.	Remarks.
	Portage.	Discharges.					
			" '	Ms. Chs.	'	Ms. Chs.	
Lac de Milieu	...	...	......	1·00	870·76	89·11	Marshy.
Savanne Creek	...	...	......	·6	870·76	89·17	Leading to Savanne Portage. Outlet of Lake.
Great Savanne Portage	13	...	31·67	1·41	839·09	90·58	Tamarac Swamp.
Savanne River	...	...	7·00	20·00	832·09	110·58	To Lake of Thousand Islands. River 1 chain wide.
Lake of a Thousand Islands	...	...	......	24·58	832·09	135·36	Clear navigation. Deep.
Portage Baril	14	...	+1·86	·17	833·95	135·53	Into Lac de Baril, which is above 1000 . Lake 1'86.
Baril Lake	...	...	......	7·43	833·95	143·16	Half-mile wide. Rocky shore and Island.
Brulé Portage	15	...	47·02	·21	786·93	143·37	A Creek connects these Lakes.
Creek	...	...	......	·6	786·93	143·43	Sluggish Creek.
Cannibal Head Lake	...	...	......	7·69	786·93	151·32	Half-mile wide, with Narrows 1 chain.
Rapid, Semi-discharge	...	5	2·50	·3	784·43	151·35	Very narrow and rocky.
Small Lake	...	...	......	2·69	784·43	154·24	From 1½ to 3 chains wide, with Narrows 50.
Creek	...	...	1·00	·3	783·43	154·27	10 wide. Shoal.
Creek Current	...	...	·50	·10	782·93	154·37	20' to 50' wide. 1 foot water in places.
Rapid	...	...	2·00	·11	780·93	154·48	Shoal, with boulders.
Pond	...	...	......	·7	780·93	154·55	5 chains wide.
Creek to French Portage	...	...	3·50	·60	777·43	155·85	2 chains wide. Shoal.
Great French Portage	16	...	99·71	1·60	677·72	157·15	Rough and rocky, with swamps.
Lake Francis	...	...	......	1·17	677·72	158·32	20 chains wide.
River	...	...	·25	1·42	677·47	159·74	Winding. 100 wide. Deep water.
Pickerel Fishery Lake	...	...	......	8·35	677·47	168·29	60 chains wide, with Narrows 100.
Portage des Morts	17	...	6·90	·26	670·57	168·55	
Lac Doré Dalles	...	...	......	1·33	670·57	170·08	20 chains wide.
Portage des deux Rivières	18	...	117·22	·26	553·35	170·34	
Small Lake and Creek	...	...	......	1·32	553·35	171·66	Leading to Sturgeon Lake.
Upper Sturgeon Lake	...	...	......	6·64	553·35	178·50	28 chains wide.
Creek	...	...	·50	1·00	552·85	179·50	Marshy. 1 chain wide.
Lower Sturgeon Lake	...	...	......	6·40	552·85	186·10	1 mile wide. Narrows 10 chains wide.
1st Sturgeon Rapids	...	6	4·51	·11	548·34	186·21	Semi-discharge.
Small Lake	...	...	......	·15	548·34	186·36	20 chains wide.
2nd *Sturgeon Rapid Portage*	19	...	6·21	·3	542·13	186·39	Fall 3 chains wide.
Rapid	...	...	5·00	1·40	537·13	187·79	Run by canoes.

Current	...	...	1·00	·20	536·13	188·19	3 chains wide;
Rapid	...	...	4·00	·6	532·13	188·25	Run by canoes.
Current	...	...	0·80	·35	531·33	188·60	5 chains wide.
Rapid	...	...	0·50	·3	530·83	188·63	Run by canoes. Shoal.
Current	...	...	1·50	2·65	529·33	191·48	
Rapid	...	...	1·50	·2	527·83	191·50	Run by canoes. Shoal.
Small Lake	...	...	......	2·30	527·83	194·00	15 chains wide.
Tanner's Rapid, Mininis Fall	...	7	6·00	·5	521·83	194·05	Semi-discharge. Generally portaged.
Current to Small Rapid	...	...	3·00	2·33	518·83	196·38	River 3 to 5 chains wide.
Small Rapid	...	...	·75	·2	518·08	196·40	River 5 chains wide.
Current	...	...	1·50	2·16	516·58	198·56	River 5 chains wide.
Island Portage	20	...	10·06	·2	506·52	198·58	Portage made on rock.
River to Pine Lake	...	...	1·50	2·65	505·02	201·43	5 chains wide, with Narrows of — chains.
Pine Lake	...	...	......	6·32	505·02	207·75	Lake 2 miles wide, stretching far to South.
Macan River—Current to Rapid	...	...	1·00	1·16	504·52	209·11	River 5 chains wide.
Small Rapid	...	...	2·00	·16	502·52	209·27	River 4 chains wide,—run this rapid.
Snake Portage	21	...	12·14	·5	490·38	209·32	Rocky Chute. Dangerous approach to portage.
River to Crow Portage	...	...	1·50	3·01	488·88	212·33	River 4 chains wide.
Crow Portage	22	...	9·88	·9	479·00	212·42	River 3 chains. Very rocky. River in two channels.
Current	...	...	1·25	3·60	477·75	216·22	River from 6 to 20 chains wide, with Islands.
Small Rapids	...	...	1·	·1	476·75	216·23	River 6 chains wide.
Current	...	...	1·50	3·50	476·25	219·73	8 chains wide.
Rapid	...	...	2·00	·3	473·25	219·76	8 chains wide.
Current to head of Grand Falls	...	...	·75	1·16	472·50	221·62	River from 4 to 20 chains wide.
Grand Falls, Macan River	23	...	16·08	·6	456·42	221·68	River 6 chains wide. Rocky Island. Approach dangerous.
Current	...	...	·75	1·44	455·67	223·32	River 20 chains wide. Islands.
Long Rapids	...	...	10·00	1·00	445·67	224·32	Run in descending, but dangerous. Portage ascending.
Current	...	...	0·50	1·52	445·17	226·04	River 4 chains wide.
Nameaukan Rapid	...	...	7·00	·15	438·17	226·19	Run descending. Portage ascending. Very rough.
Current to Nameaukan Lake	...	...	·50	1·54	437·67	227·73	River 5 chains wide.
Nameaukan Lake	...	...	......	6·63	437·67	234·36	Lake half mile wide, with Islands 5 miles at end.
Portage No. 1	24	...	8·55	·6	429·12	234·62	Into pond.
Pond or Creek	...	...	......	·20	429·12	235·02	1½ chains wide. Marshy.
Portage No. 2	25	...	·21	·11	428·91	235·13	To level of Rainy Lake.
Rainy Lake	...	...	......	34·59	428·91	269·34	To entrance of Rainy River.
Small Rapid, Rainy River	...	...	2·00	·4	428·91	269.76	Run by canoes.
Current to Chaudière Falls	...	...	1·00	1·79	425·91	271·75	8 chains wide.
Chaudière Falls, Fort Francis	26	...	22·88	·8	403·03	272·03	Portage on North side of Fall.
Rainy River Current	...	...	11·00	31·40	392·03	303·43	River about 15 chains. Clay banks.
1st Rapid Manitou	...	...	2·50	·3	389·53	303·46	Rapid run. River narrows to 4 chains.
Current	...	...	3·50	7·40	386·03	311·06	River wide and navigable.
2nd or Long Rapid	...	...	3·00	·5	383·03	311·11	Run by canoes. Narrows.
Current	...	...	9·00	30·20	374·03	341·31	To Dead Water River. Narrows.
From end of Current to Lake of the Woods	...	...	......	5·00	374·03	346·31	Dead Water.
Lake of the Woods	...	...	......	64·17	374·03	410·48	To Rat Portage.

Table shewing the heights and distances of the different breaks which occur in the Hudson's Bay Canoe Route, between Fort William, Lake Superior, and Fort Garry, Red River, &c.—(*Continued.*)

Name.	Number of		Height.	Length.	Reduced level.	Distance from Lake Superior.	Remarks.
	Portage.	Discharges.					
			′ ″	Ms. chs.	′ ″	Ms. chs.	
Rat Portage	27	...	15·98	·13	358·05	410·61	Hudson Bay Company port channels through many islands.
Winipeg River: current	...	...	2·00	9·28	356·05	420·09	Lake narrows and islands—rocky shores.
1st Rapid des Dalles	...	...	3·00	·10	353·05	420·19	River 2½ chains wide, run by canoes.
Current	...	...	·75	5·02	352·30	425·21	Through islands, occasional narrows.
Do	...	...	·25	1·00	352·05	426·21	
To Semi-discharge Rapid	...	...	1·00	12·59	351·05	439·00	
Semi-discharge	...	8	5·50	·03	345·55	439·63	One chain wide, high rocky bank, generally portaged.
Current	...	...	·25	1·00	345·30	440·03	Narrow channel, 4 chains wide.
Current	...	...	·50	·54	344·80	440·57	High rocky chiffs, river 5 chains wide.
Rapid	...	...	3·00	·03	341·80	440·60	River 5 chains wide.
Current to head of Yellow Mud	...	...	·25	·24	341·55	441·04	Do do do.
Yellow Mud Falls	28	...	22·02	·05	319·53	441·09	Heavy Falls, portage steep, bad approach.
To small pitch at foot	...	...	...	·05	319·53	441·14	
Demi-discharge	...	9	7·00	·04	312·53	441·18	Very heavy pitch—run occasionally at high water.
Current to Pine Portage	...	...	·25	·54	312·28	441·72	River 6 chains wide, high banks.
Pine Portage	29	...	8·24	·10	304·04	442·02	River narrows to 3 chains.
Current to Cave Rapid	...	...	...	·05	304·04	442·07	
Cave Rapid	...	...	4·00	·03	300·04	442·10	Run—river narrows to 1½ chains.
River to Small Rapid	...	...	...	·27	300·04	442·37	
Rapid	...	...	2·00	·01	298·04	442·38	River 1 chain wide.
River to De L'Isle Portage	...	...	4·71	17·00	293·33	459·38	Varying in width from 8 to 40 chains, rocky.
De l'Isle Portage	30	...	3·40	3·00	289·93	459·41	Sometimes run, but dangerous in three channels.
River (Lake Têtu)	...	...	...	3·24	289·93	462·65	Sixty chains wide, with many islands.
Current	...	...	·75	·08	289·18	462·73	Seven chains wide.
Do	...	...	3·00	11·12	286·16	474·05	From 3 to 8 chains wide—islands.
Do	...	...	·75	·59	285·43	474·64	From 3 to 8 chains wide.
Current to head of rapid	...	...	3·00	5·32	282·43	480·16	Rapid current.
Rapid	...	...	1·50	·40	280·93	480·56	Rapid.
To head of Jocho	...	...	·25	·16	280·68	480·72	
Chute à Jocho	31	...	13·00	·05	267·68	480·77	Eight chains wide—rocky portages on rocks.
Small Rapid	...	...	1·00	·02	266·68	480·79	Run—heavy water.

Current	...	...	·30	·70	266·18	461·69	
To head of 1st Point des Bois	...	...	3·00	6·60	263·18	468·49	River 20 chains wide—numerous islands.
1st *Point des Bois Falls*	32	...	10·50	·13	252·68	468·62	River 15 chains.
River to head of 2nd Chute	...	...	...	·05	252·68	468·67	River 15 chains.
2nd *Point des Bois Falls*	33	...	19·92	·05	232·76	468·72	River 20 chains wide, rocky in three channels.
Current to 3rd Chute	...	...	1·50	1·16	231·26	490·08	River 15 chains wide.
3rd *Point des Bois Falls*	34	...	7·80	·03	223·46	490·11	River 20 chains wide in three channels.
Current	...	...	1·00	·72	222·46	491·08	
Current to Slave Falls	...	...	·25	2·74	222·21	493·77	River about 20 chains wide.
Slave Falls	35	...	19·80	·30	202·41	494·27	Perpendicular fall—dangerous portage.
Current	...	...	1·00	5·44	201·41	499·71	River 15 chains wide.
Rapid	...	...	1·50	·18	199·91	500·09	Run, at the head of Barrière Chute.
Barrière Chute	36	...	4·97	·03	194·94	500·12	Very heavy whirlpool below the fall.
Small Rapids	...	...	1·00	·24	193·94	500·36	
River	...	...	·25	1·22	193·69	501·58	Twenty chains wide.
Current	...	...	·50	·24	193·19	502·02	Do do.
To Otter Falls; current	...	...	1·00	4·75	192·19	506·77	Do do.
Otter Falls	...	...	3·00	·10	189·19	507·07	Run—this rapid very bad and dangerous.
Current	...	...	1·50	2·42	187·69	509·49	
Do	...	...	·75	2·34	186·94	512·03	
Rapid	...	...	2·00	·06	184·94	515·09	River 4 chains wide.
To head of Seven Portages	...	...	·33	1·68	184·61	513·77	Banks low, 10 chains wide.
1st *of Seven Portages*	37	...	10·23	·06	174·38	514·03	These portages are all on short rocky points, the approaches to the portages are exceedingly dangerous.
Current to 2nd Chute	...	...	·13	·05	174·25	514·08	
2nd *Chute*	38	...	8·47	·05	165·78	514·13	
Current to 3rd Chute	...	...	·16	·10	165·62	514·23	
3rd *Chute*	39	...	5·60	·08	160·02	514·31	
Current to 4th Chute	...	...	·25	·40	159·77	514·71	
4th *Chute*	40	...	7·68	·06	152·09	514·74	
Current to 5th Chute	...	...	·75	·48	151·34	515·42	
5th *Chute*	41	...	2·90	·04	148·44	515·46	Sometimes run—very dangerous.
Current to 6th Chute	...	...	·30	·05	148·14	515·51	
6th *Chute*	42	...	8·13	·05	140·01	515·56	
Current to 7th Chute	...	...	1·50	·60	138·51	516·36	
7th Chute	...	...	4·75	·06	133·76	516·42	Run, but dangerous—portage ascending.
Current to Lac de Bonnet	...	...	3·50	10·44	130·26	527·16	Land improves, clay soil—poplar and birch.
Lac de Bonnet	...	...	...	6·09	130·26	533·25	
Narrows at outlet	...	...	1·00	·07	129·26	533·32	Three chains wide—rocky.
1st *Gala de Bonnet*	43	...	1·00	·01	121·95	533·33	Short rocky fall.
Current to 2nd Gala	...	...	·16	·74	121·79	534·27	
2nd *Gala de Bonnet*	44	...	5·00	·04	116·79	535·31	
To head of Big Bonnet Chute	...	...	2·00	3·51	114·79	532·02	River 8 to 10 chains wide.
Big Bonnet Falls	45	...	34·23	·51	80.56	538·53	Fine level portage.
Current	...	...	1·00	·73	79·56	539·45	Ten chains wide—strong current.
Portage Rocher de Bonnet	46	...	8·25	·06	71·31	539·51	

Table shewing the heights and distances of the different breaks which occur in the Hudson's Bay Canoe Route, between Fort William, Lake Superior, and Fort Garry, Red River, &c.—(*Continued.*)

Name.	Number of		Height.	Length.	Reduced level.	Distance from Lake Superior.	Remarks.
	Portages.	Discharges.	′ ″	Ms. chs.	′ ″	Ms. chs.	
Current to head of White Mud	...	...	1·00	2·02	70·31	542·33	Thirty chains wide.
White Mud Falls Portage	47	...	13·05	·15	57·26	542·48	Do do.
Current to Silver Falls	...	...	·75	2·68	56·51	545·36	
1st Silver Falls Portage	48	...	6·06	·07	50·45	545·43	Sometimes made by one portage.
To 2nd Portage	...	...	...	·05	50·45	545·48	
2nd Silver Falls Portage	49	...	15·56	·13	39 89	545·61	
Current	...	...	1·50	3·18	33·39	548·79	River 15 chain s wide.
Rapid	...	...	2·00	·06	31·39	549·05	River 10 do.
Current	...	...	·75	·68	30·64	549·73	
Rapid	...	...	3·00	·07	27·64	550·00	River 9 do.
Current to Pine Portage	...	...	·25	·68	27·39	550·68	
Pine Portage and Falls	50	...	8·35	·12	19·04	551·00	Fifteen chains wide—last portage.
Current	...	...	·50	1·34	18·54	552·34	
Small Rapid "Manitou"	...	...	1·00	·02	17·54	552·56	Eight chains wide.
Current to dead water	...	...	·75	4·28	16·79	556·64	Fort Alexander, Hudson Bay Company post.
Lake Winipeg	...	...	...	2·00	16·79	558·64	Mouth of the River Winipeg.
Do	...	...	...	44·98	16·79	404·02	Do do Red River.
Red River	...	...	...	6·25	16·79	610·27	Through marsh.
Indian Settlement	...	...	·25	8·71	17·04	619·18	Current.
Stone Fort	...	...	1·75	7·64	18·79	627·02	
Current	...	...	·25	1·44	19·04	628·46	
Do	...	...	3·00	2·33	22·04	630·79	
Rapids	...	...	2·00	·02	24·04	631·01	Grand rapids, two feet water.
Current	...	...	8·50	8·38	32·54	639·39	
Fort Garry	...	...	2·00	7·51	34·54	647·10	Mouth of Assiniboine.

Fort Garry,
Red River Settlement,
December 10, 1857.

(Signed,) W. H. E. Napier.

RED RIVER SETTLEMENT,
17th December, 1857.

SIR,—As such a length of time has elapsed since the date of my last report, I beg to state, in explanation, that I was detained for some weeks, at the Winipeg River, by illness, having caught a fever which had been prevalent among the canoe men for some time previous, and that since I came here, there has been no suitable opportunity by which a report, with the necessary plans, could have been sent to Canada.

I have now the honor to report that the party under my directions are engaged in exploring the country between this place and the Lake of the Woods; but before referring more particularly to their operations, I would respectfully submit to your notice a brief report on the country through which we have passed, describing the route as it now is, and explaining the manner in which, I think, the communication between Red River and Lake Superior could be most effectually and economically opened up.

We came by the usual canoe route from Fort William, following the Kaministiquia, the Rainy, and the Winipeg rivers.

The principal difficulties on this route are to be met with, in the first place, on the Kaministiquia River, between Lake Superior and Dog Lake; in the next, between the Lake of a Thousand Lakes (Lac de Milles Lacs), and Rainy Lake, and, again, between the Lake of the Woods and Lake Winipeg.

The Kaministiquia for ten or twelve miles upwards from Lake Superior, has a smooth course; rapids then occur in close succession, for ten or twelve miles further to the Grand Falls, but canoes can be either towed or poled up these with tolerable facility. Within the next ten miles the river makes a descent of about three hundred feet, forming many serious obstructions to the navigation, with but short intervals of quiet water between them. On this portion of the route there are numerous portages, half portages, and rapids which render the ascent of canoes extremely tedious and difficult. After this there is a short reach of quiet water to the Great Dog Portage. There the river makes a descent of three hundred and forty-seven feet, in the short distance of a mile and seventy-three chains. This is the steepest portage on the route; the summit of the ridge over which it passes being five hundred feet above the level of the water at the lower end. Arrived at Dog Lake, the distance from Lake Superior, by the windings of the Kaministiquia, is about forty-six miles, while in a direct line from Thunder Bay, on that lake, it is only about twenty-four miles. It will at once occur that the rough and rocky Kaministiquia would be best avoided by making a road direct from Thunder Bay to Dog Lake, which would then be within half-a-days' drive of Lake Superior, instead of its taking nearly five days to reach it, as it did us by the Kaministiquia, although we were tolerably well manned and but lightly loaded.

Through Dog Lake the water is deep, and from thence to Jourdain's Rapid, a distance of about twenty-five miles, Dog River winds through a marsh, on either side of which the land rises to a considerable elevation. In this distance only one little rapid occurs, about three miles below Jourdain's, where there is a fall of three feet six inches. The fall at Jourdain's is eight feet six inches. Here the route diverges from Dog River, and for two miles follows a small brook, which is so narrow that the willows which fringe the margin on either side almost meet over it. Above this there are three small ponds, which, taken together, are scarcely a mile in length. The last of these ponds is called "Cold Water Lake," and it has usually been regarded as the source of the St. Lawrence.

The rise from Dog Lake to Cold Water Lake, I estimate at about eighteen feet. A dam, therefore, of sufficient height, thrown across the outlet of Dog Lake, would have the effect of converting the marsh, through which, as just explained, Dog River winds, into a lake, and thus rendering the navigation easy between the road which should cross from Thunder Bay and the Prairie Portage. Nor would the dam have the effect of flooding a great extent of country, for the lands about Dog

Lake are high, as they likewise are on either side of the marsh just referred to.

Between Cold Water Lake and the Savanne River, there are three portages, namely: the Prairie Portage, which crosses the dividing ridge between Cold Water Lake and the waters which flow towards the Winipeg; the Middle Portage, separated from the former only by a pond; and the Savanne Portage, about a mile from the Middle Portage. The entire distance from Cold Water Lake to the Savanne River being about five miles. The country here is densely wooded, and the ground is in every respect favorable for a road. The Savanne Portage does not pass through a morass as is usually supposed, but through an ordinary swamp, with about two feet of black earth over a bottom of hard clay, and having a fall of thirty-one feet eight inches in the distance of a mile and a half.

From the Savanne Portage, by the present route, there is a reach of forty-four miles, interrupted only by a little flood-wood in the Savanne River; but if the Lake of a Thousand Lakes, and its discharge, could be followed to the first rapids, there would then be a navigable reach of about 74 miles in a direct line, or 84 miles by the windings of the river and lake. The canoe route, however, diverges from the Lake of a Thousand Lakes at Baril Portage, and thence follows a chain of small lakes to the Maligne, or Nameaukan River, which flows into Lac La Croix, which again empties itself into Rainy Lake. Between these lakes the portages are long and difficult, and in the Nameaukan River there are many rapids and falls. Returning again to the Lake of a Thousand Lakes, the river which flows from it, according to the information we have from the Indians, discharges itself into the north-easterly arm of Rainy Lake, as shewn on the accompanying plans. The distance between the two lakes is only about 60 miles in a direct line, but the river has never been followed as the canoe route, on account of the length of some of the portages. If a road could be made past the impediments, however, it would be the most direct route to Rainy Lake, and advantage would be taken of the long navigable reach in the Lake of a Thousand Lakes.

The exploration of the stream which flows from this lake, as I shall presently explain, is a part of the work which we have in contemplation for the present winter.

Through Rainy Lake, and from thence by Rainy River and the Lake of the Woods to Rat Portage, in a distance of 164 miles, there is no impediment to the navigation except at Fort Francis, where a short portage has to be made past the Chaudière Falls, where there is a descent of twenty-two feet in a distance of seven chains. From the Lake of the Woods to Lake Winipeg, the distance, according to our estimate, is over 160 miles by the windings of the river, and the difference of level about 369 feet. The Winipeg is a river of immense volume, not much inferior in size, I should say, to the Ottawa, and the approach to the portages, and whirlpools, and eddies below them, are, in some cases, not unattended with danger. In this long distance, however, there are many smooth reaches, varying from four to twenty-five miles in length, as will be seen on reference to the accompanying table of levels and distances.

From the mouth of the Winipeg to the mouth of Red River, the distance, through Lake Winipeg, is about forty-five miles, and from thence to Fort Garry, at the mouth of the Assiniboine, about thirty-six miles. By this circuitous route, the total distance from the Lake of the Woods to Fort Garry is not less than 240 miles, while in a direct line from Fort Garry to Lac Platte, from which place to the Lake of the Woods, if I am correctly informed, there is no impediment, it is only 96 miles. A land road, therefore, over this distance, would be a great improvement on the present route, inasmuch as the dangerous navigation of Lake Winipeg, and the numerous portages and rapids on the Winipeg River would be avoided, and the distance shortened by at least 140 miles; and although the distance would still be great for a land road, it must not be lost sight of that the means of transport are to be had here in abundance, the people of this settlement esteem it but a light thing to travel immense distances over the prairies in carts in search of buffalo; and in summer they go in the same way to St. Pauls, distant from this place, as the road winds, over 600 miles. This is an important consideration, in estimating the advantage of a road from Fort Garry to the Lake of the Woods.

The length of land and water carriage from Lake Superior, by the route which I have thus imperfectly sketched out, would be nearly as follows :—

From Lake Superior to Dog Lake, allowing for curves, say—land carriage........................	25 miles
Through Dog Lake and from thence to Cold Water Lake,—supposing the navigation to be rendered practicable by a dam thrown across the outlet of Dog Lake—water carriage.............................	35 miles
From Cold Water Lake, over the Prairie, and past the Middle and Savanne Portages, to the Savanne River—land carriage...........................	5 miles
From the Savanne Portage, by the river of the same name, and through the Lake of a Thousand Lakes, to the rapids below its western extremity—water carriage..	84 miles
From these rapids to Rainy Lake the distance is about sixty miles, but this part of the route is not yet explored; however, from the information we had from the Indians, it would be safe to allow two-thirds of the distance to be navigable, say, therefore—land carriage..........................	20 miles
and—water carriage...............................	40 "
Through Rainy Lake, by the river of that name, and the Lake of the Woods, to the head of Lac Platte, interrupted only by the falls at Fort Francis, navigable for..	160 miles
From Lac Platte to Fort Garry, allowing for curves, say—land carriage......................................	100 "
Total distance...............	469 miles

Of which 150 miles would be by land, and the remaining 319 miles by water ;—the distance by the present route is not less than 635 miles, so that in this respect there would be a great saving.

Returning again to Lake Superior, and regarding the Kaministiquia apart from the numerous falls and rapids which embarrass its course, the water at its mouth is so shallow, as not to admit the approach of vessels drawing over three feet, while in Thunder Bay, the water is of sufficient depth, and where, moreover, it is said, there is an excellent harbour sheltered by an island. This point, however, can be determined on reference to Captain Bayfield's charts, which I have not with me. If I am correct in supposing that the depth is sufficient, the advantage of having the terminus of the road where vessels of all sizes would approach it, and lie in safety, taken in connection with the shorter distance, will be a powerful argument in favor of having the road to cross from Thunder Bay, instead of following the more circuituous route of the Kaministiquia.

I shall now, for a moment, suppose the communication opened as proposed, and that merchandize is about to be sent through from Lake Superior to the Red River Settlement. In the first place, it would be necessary for those engaging in the forwarding business to have a depôt at the terminus of the road in Thunder Bay, and to maintain there the horses, oxen, and outfit necessary for the land transport. A like outfit would be required at the Prairie Carrying Place, and at the carrying place or places which it might be necessary to have between the Lake of a Thousand Lakes and Rainy Lake,—the number of horses and oxen at the respective stations being of course proportioned to the length of the road.

The next carrying place, at the Falls at Fort Francis, has been already alluded to as the only break in a reach otherwise navigable of 160 miles. If a considerable trade were established, it would, no doubt, be found advantageous to construct locks at this falls, but until such is the case, the portage being only 150 yards in length, over even ground, the present mode of transport can involve no great difficulty.

For the next, and last carrying place, from the Lake of the Woods to Red River, no provision would have to be made, inasmuch as it would have its terminus, as already stated, where

Current	...	...	1·00	·20	536·13	188·19	3 chains wide.
Rapid	...	...	4·00	·6	532·13	188·25	Run by canoes.
Current	...	...	0·80	·35	531·33	188·60	5 chains wide.
Rapid	...	...	0·50	·3	530·83	188·63	Run by canoes. Shoal.
Current	...	...	1·50	2·65	529·33	191·48	
Rapid	...	...	1·50	·2	527·83	191·50	Run by canoes. Shoal.
Small Lake	...	...	......	2·30	527·83	194·00	15 chains wide.
Tanner's Rapid, Mininis Fall	...	7	6·00	·5	521·83	194·05	Semi-discharge. Generally portaged.
Current to Small Rapid	...	...	3·00	2·33	518·83	196·38	River 3 to 5 chains wide.
Small Rapid	...	...	·75	·2	518·08	196·40	River 5 chains wide.
Current	...	...	1·50	2·16	516·58	198·56	River 5 chains wide.
Island Portage	20	...	10·06	·2	506·52	198·58	Portage made on rock.
River to Pine Lake	...	...	1·50	2·65	505·02	201·43	5 chains wide, with Narrows of — chains.
Pine Lake	...	...	......	6·32	505·02	207·75	Lake 2 miles wide, stretching far to South.
Macan River—Current to Rapid	...	...	1·00	1·16	504·52	209·11	River 5 chains wide.
Small Rapid	...	...	2·00	·16	502·52	209·27	River 4 chains wide,—run this rapid.
Snake Portage	21	...	12·14	·5	490·38	209·32	Rocky Chute. Dangerous approach to portage.
River to Crow Portage	...	...	1·50	3·01	488·88	212·33	River 4 chains wide.
Crow Portage	22	...	9·88	·9	479·00	212·42	River 3 chains. Very rocky. River in two channels.
Current	...	...	1·25	3·60	477·75	216·22	River from 6 to 20 chains wide, with Islands.
Small Rapids	...	...	1·	·1	476·75	216·23	River 6 chains wide.
Current	...	...	1·50	3·50	476·25	219·73	8 chains wide.
Rapid	...	...	2·00	·3	473·25	219·76	8 chains wide.
Current to head of Grand Falls	...	...	·75	1·16	472·50	221·62	River from 4 to 20 chains wide.
Grand Falls, Macan River	23	...	16·08	·6	456·42	221·68	River 6 chains wide. Rocky Island. Approach dangerous.
Current	...	...	·75	1·44	455·67	223·32	River 20 chains wide. Islands.
Long Rapids	...	...	10·00	1·00	445·67	224·32	Run in descending, but dangerous. Portage ascending.
Current	...	...	0·50	1·52	445·17	226·04	River 4 chains wide.
Nameaukan Rapid	...	...	7·00	·15	438·17	226·19	Run descending. Portage ascending. Very rough.
Current to Nameaukan Lake	...	...	·50	1·54	437·67	227·73	River 5 chains wide.
Nameaukan Lake	...	...	......	6·63	437·67	234·56	Lake half mile wide, with Islands 5 miles at end.
Portage No. 1	24	...	8·55	·6	429·12	234·62	Into pond.
Pond or Creek	...	...	......	·20	429·12	235·02	1½ chains wide. Marshy.
Portage No. 2	25	...	·21	·11	428·91	235·13	To level of Rainy Lake.
Rainy Lake	...	...	......	34·59	428·91	269·34	To entrance of Rainy River.
Small Rapid, Rainy River	...	...	2·00	·4	428·91	269·76	Run by canoes.
Current to Chaudière Falls	...	...	1·00	1·79	425·91	271·75	8 chains wide.
Chaudière Falls, Fort Francis	26	...	22·88	·8	403·03	272·03	Portage on North side of Fall.
Rainy River Current	...	...	11·00	31·40	392·03	303·43	River about 15 chains. Clay banks.
1st Rapid Maniton	...	...	2·50	·3	389·53	303·46	Rapid run. River narrows to 4 chains.
Current	...	...	3·50	7·40	386·03	311·06	River wide and navigable.
2nd or Long Rapid	...	...	3·00	·5	383·03	311·11	Run by canoes. Narrows.
Current	...	...	9·00	30·20	374·03	341·31	To Dead Water River. Narrows.
From end of Current to Lake of the Woods	...	...	......	5·00	374·03	346·31	Dead Water.
Lake of the Woods	...	...	......	64·17	374·03	410·48	To Rat Portage.

larger boats might, no doubt, be used with advantage, and in the transport of merchandize, a great saving would be effected by having a relay of them at every carrying place, as the Hudson's Bay Company have at the Methy Portage on the route to the McKenzie River.

Having thus explained the manner in which, I conceive, the communication could be most advantageously opened up, it is but proper that I should endeavor to convey some idea of the cost of the undertaking; but, until further exploration takes place, any estimate that can be made, must be regarded as the merest approximation. The country from the Lake of a Thousand Lakes to Rainy Lake, is but little known. The present route between these Lakes is objectionable on account of the frequency of the portages, and the shortness of the navigable reaches; rather than follow it, it would be better to have a land road, say sixty miles in length, all the way through, but this would not be necessary, for, according to the information which we have, the discharge of the Lake of a Thousand Lakes is navigable throughout the greater part of its course, but the precise extent to which it is so can only be determined on further exploration. There remains also to be considered the route from Pigeon Bay, which has not yet at all been explored, with a view of ascertaining its fitness for a line of communication. It has, however, been very accurately surveyed by the Boundary Commissioners, and on reference to Mr. Thompson's map, it will be seen that it has the objection of frequent portages, with but short navigable reaches; all the way from Lake Superior to Rainy Lake, there is no such unbroken reach as that through the Savanne River and the Lake of a Thousand Lakes. It has, moreover, the disadvantage of being on the United States frontier, and having many of the portages on the United States territory.

Apart from this, however, until it is explored, it would be premature to offer any positive opinion regarding it. But to return to the question of cost, in reference to the route which I have ventured to propose, and which, I think, from what is yet known of the country, will be the one eventually adopted, and

Current	...	...	·50	·70	266·18	481·69	
To head of 1st Point des Bois	...	...	3·00	6·60	263·18	488·49	River 20 chains wide—numerous islands.
1st *Point des Bois Falls*	32	...	10·50	·13	252·68	488·62	River 15 chains.
River to head of 2nd Chute	...	...	...	·05	252·68	488·67	River 15 chains.
2nd *Point des Bois Falls*	33	...	19·92	·05	232·76	488·72	River 20 chains wide, rocky in three channels.
Current to 3rd Chute	...	...	1·50	1·16	231·26	490·08	River 15 chains wide.
3rd *Point des Bois Falls*	34	...	7·80	·03	223·46	490·11	River 20 chains wide in three channels.
Current	...	...	1·00	·72	222·46	491·03	
Current to Slave Falls	...	...	·25	2·74	222·21	493·77	River about 20 chains wide.
Slave Falls	35	...	19·80	·30	202·41	494·27	Perpendicular fall—dangerous portage.
Current	...	...	1·00	5·44	201·41	499·71	River 15 chains wide.
Rapid	...	...	1·50	·18	199·91	500·09	Run, at the head of Barrière Chute.
Barrière Chute	36	...	4·97	·03	194·94	500·12	Very heavy whirlpool below the fall.
Small Rapids	...	...	1·00	·24	193·94	500·36	
River	...	...	·25	1·22	193·69	501·58	Twenty chains wide.
Current	...	...	·50	·24	193·19	502·02	Do do.
To Otter Falls; current	...	...	1·00	4·75	192·19	506·77	Do do.
Otter Falls	...	...	3·00	·10	189·19	507·07	Run—this rapid very bad and dangerous.
Current	...	...	1·50	2·42	189·69	509·49	
Do	...	...	·75	2·34	186·94	512·03	
Rapid	...	...	2·00	·06	184·94	515·09	River 4 chains wide.
To head of Seven Portages	...	...	·33	1·68	184·61	513·77	Banks low, 10 chains wide.
1st *of Seven Portages*	37	...	10·23	·06	174·38	514·03	
Current to 2nd Chute	...	...	·13	·05	174·25	514·08	
2nd *Chute*	38	...	8·47	·05	165·78	514·13	
Current to 3rd Chute	...	...	·16	·10	165·62	514·23	These portages are all on short rocky points, the approaches to the portages are exceedingly dangerous.
3rd *Chute*	39	...	5·60	·08	160·02	514·31	
Current to 4th Chute	...	...	·25	·40	159·77	514·71	
4th *Chute*	40	...	7·68	·03	152·09	514·74	
Current to 5th Chute	...	...	·75	·48	151·34	515·42	
5th *Chute*	41	...	2·90	·04	148·44	515·46	Sometimes run—very dangerous.
Current to 6th Chute	...	...	·30	·05	148·14	515·51	
6th *Chute*	42	...	8·13	·05	140·01	515·56	
Current to 7th Chute	...	...	1·50	·60	138·51	516·36	
7th Chute	...	...	4·75	·06	133·76	516·42	Run, but dangerous—portage ascending.
Current to Lac de Bonnet	...	...	3·50	10·44	130·26	527·16	Land improves, clay soil—poplar and birch.
Lac de Bonnet	...	...	...	6·09	130·26	533·25	
Narrows at outlet	...	...	1·00	·07	129·26	533·32	Three chains wide—rocky.
1st *Gala de Bonnet*	43	...	1·00	·01	121·95	533·33	Short rocky fall.
Current to 2nd Gala	...	...	·16	·74	121·79	534·27	
2nd *Gala de Bonnet*	44	...	5·00	·04	116·79	535·31	
To head of Big Bonnet Chute	...	...	2·00	3·51	114·79	532·02	River 8 to 10 chains wide.
Big Bonnet Falls	45	...	34·23	·51	80.56	538·53	Fine level portage.
Current	...	...	1·00	·72	79·56	539·45	Ten chains wide—strong current.
Portage Rocher de Bonnet	46	...	8·25	·06	71·31	539·51	

Twenty miles of land road, allowing that so much would be required, between Rainy Lake and the Lake of a Thousand Lakes, at £225 per mile, would amount to	4500	0	0			
Five miles across the height of land from the Savanne River to Cold Water Lake, at say £225 per mile	1125	0	0			
				28125	0	0
Twenty-eight miles from Dog Lake to Thunder Bay, the country being hilly, allow say £400 per mile, which would amount to	11200	0	0			
To build a dam across the outlet of Dog Lake, say	2000	0	0			
To clear away the flood wood in the Savanne River, and cut down the overhanging trees, say	250	0	0			
Add, for the bridging of considerable streams throughout the line, say	2500	0	0			
				44075	0	0
Allow to complete the surveys and to have the line thoroughly located in the most advantageous ground				7500	0	0
Total,				£51575	0	0

This is a large sum of money, but the advantages which the Province would derive from opening the communication, would soon afford an ample compensation for the outlay; it requires no argument to prove this, when it is considered with what vast regions it would be the means of establishing an intercourse, what a field for colonization it would open up, and what a trade it would in the course of a few years pour through Canada.

It has been urged that, as this was once the route of the great Canadian North West Company to their trading establishments in the interior of the Continent, and that as it was then an highway of a great traffic, all that is required now is to put the carrying places in the same order as they were in at that time. But this is a mistake; the route was not suited then, any more than it is now, for the purposes of a general commerce. Heavy articles could not be transported over it, and the enormous profits of the fur trade alone enabled the Company to sustain the cost of the conveyance of light ones. On the other hand it would be easy to suggest a mode of opening the communication which, could it be carried out, would be more perfect than that which I have proposed, although not so economical. Thus, a system of canals, or railroads, all the way through, may appear at first sight to be a feasible project; but it must be borne in mind, that the country between Lake Superior and Red River, although well adapted for settlement throughout the greater part of its extent, is as yet but a wilderness, and until settlement has advanced, and emigration taken this direction, to the vast and fertile prairies of the West, I conceive that it would be premature to entertain such schemes.

As the adaptation of the country on this route, for settlement, is a very important point to be considered in connection with opening the communication, I trust I shall not be considered tedious, if I endeavor to convey as clear an idea on this head as I possibly can. To begin at Lake Superior, the lower part of the valley of the Kaministiquia, that is, from Fort William upwards to the Grand Falls, is, unquestionably, well adapted for settlement. The country is comparatively level, and to judge from the growth of wood and the luxuriance of the vegetation when we passed, the soil must be good. There is already an Indian settlement at a bend of the river a short distance from Fort William. Here the Rev. Mr. Choné has established a mission and built a commodious church. This gentleman has spent many years in the country, and from him we obtained much valuable information in regard to the climate and soil. According to his observations, the Kaministiquia never freezes over sooner than the 3rd, nor later than the 18th of November, and seldom breaks up earlier than the 23rd of April.

The soil, where the Indians are settled, he describes as not being very good, on account of its being too low, but further up the river he said the land was better, and well adapted for the growth of cereals. From the Kakabeka, or Grand Falls, upwards to Dog Lake, the river is very rough, and its shores, in general, broken and rugged; although the soil here is not well adapted for settlement, large quantities of white pine are to be seen occasionally, which, sooner or later, must become a valuable article of commerce; and those who settled on the river lower down, would have the prospect of profitable employment in preparing it for the market during the winter months, when their farms demand less of attention.

About Thunder Bay, I am inclined to think a settlement could be formed; and from thence by the road which should cross to Dog Lake, if, on exploration, the land should prove suitable, I do not think the climate would be found unfavorable. About Dog Lake, and from thence westward, for more than a hundred miles, to the lower extremity of the Lake of a Thousand Lakes, the country is at a considerable elevation, and the climate must be rather cold. The heights of this part of the route, allowing Lake Superior to be 641 feet above the sea level, are as follows:

Dog Lake above Lake Superior, 704 feet; above the sea, 1,345 feet. Pond, at west end of Prairie Portage, 874 feet; above the sea, 1,520 feet. Lake of a Thousand Lakes above Lake Superior, 823 feet; above the sea, 1,464 feet. In this high region the winters must be rather severe, and yet the growth of timber would not indicate a very cold climate, while the soil, more especially about the Lake of a Thousand Lakes, is apparently of good quality. At the carrying places, settlers would no doubt find it their interest to establish themselves, but it is questionable if many would remain on the most exposed part of a route which led to more favored localities.

Between the Lake of a Thousand Lakes and Rainy Lake, the country appears to be greatly cut up with small lakes, indeed, so much is this the case, that it would be difficult to say, whether it would be better described, as land intersected by numerous lakes, or as one great lake, with ridges of land running through it. On descending towards Rainy Lake, however, there is a very perceptible and evident change in the climate, the maple, elm and oak begin to appear, the vegetation becomes more rank and luxuriant, and although the country is broken, there are many fine situations, where settlers might establish themselves with advantage; and there are those who would find a great inducement to do so, in the fact that the country abounds in game, which is but little hunted, and the lakes in fish, of the finest description. Rainy Lake is so full of islands, and there are so many deep bays and indentures on the Canadian side, that it is difficult, in passing through it by the canoe route, to obtain a view of the main land. From all we can learn, however, there can be no doubt that there are many places favorable for settlement. This lake is on a lower level, by 404 feet, than the Lake of a Thousand Lakes, which partly accounts for the remarkable difference which evidently exists in the climate of the two.

Another reason may be found in the fact, that Rainy Lake lies in a sheltered valley, with a broad extent of high land to the north about the lake, and at many places before reaching it, there are extensive forests of pine, which, considering the vast extent of unwooded prairie country to the west, must, at some period, become the staple of considerable commerce.

At Fort Francis, two miles below Rainy Lake, the Hudson's Bay Company have a farm, where we saw wheat and potatoes growing to perfection. Mr. Pether, the gentleman in charge of the establishment, informed us that, in regard to climate, he considered the country much the same as Montreal—of which place I understood him to say he was a native—only that he believed the winter at Fort Francis to be a little colder.

Rainy River, which forms here the boundary between Canada and the United States, is a magnificent stream, varying from 250 yards to a quarter of a mile in width, and flowing with a winding course through a valley of deep alluvial soil. The banks rise from to the height of 30 to 40 feet, with a gentle slope to the river, while back of that the country is apparently level. The prevailing growth of wood is poplar, as in the rich alluvial soil at Red River, but the balm of gilead tree is abundant, and elm, in many places, line the margin of the stream. As this is the finest country for settlement on the route, I shall here, with your permission, transcribe an extract from my journal, in which I have described it more at length :

"23rd August, 1857.—Start at daybreak, and continue our course down Rainy River. There is no change to note in the appearance of the country, the broad river glides on between banks which, on either side are clothed with forests of the most luxuriant green, broken only, as yesterday, by an occasional little Indian clearing, of which the artichoke and wild oats have taken undisputed possession. About 8, A. M., we run a little apid, on the north side of which there is an extensive old clearing, with two mounds like little pyramids, evidently raised at some period by the hand of man. We ascend one of these, which may be about 40 feet in height, with a breadth of 100 feet at the base. It is covered with a rank growth of weeds and wild oats, and asking the Indian guide for what purpose such mounds had been raised, he replied that long ago a hostile tribe had penetrated into the country, and that the mounds were erected as earth houses (they go by that name in Indian), where the warriors of this tribe had sheltered their women and children. It is probable that they may have been erected as works of defence, for they overlook the river at a narrow point, where there is a rapid. It is possible, also, that they may be the burying-places of past generations of Indians, whose history has been forgotten by their descendants. On landing to dine to-day, I went a few miles into the woods, and found the soil of the richest description, growing poplar and balm of gilead trees of a very large size. We camp in the evening on a sandy point, the first we have seen growing red pine. The distance we have come to-day cannot be more than 40 miles; such an extent of rich land without a break, or a country so well adapted for settlement, I have seldom seen. Rainy River does not seem subject to great floods; the trees on the bank grow within a few feet of the water as it now is; four feet over the present level, I should think he greatest height to which it ever attains. It is said, however, that it is sometimes as much as three feet lower, so that there may be a difference of six or seven feet between extreme low and high water.

"24th August, 1857.—Start at 20 minutes to 5, A. M., and breakfast late at the entrance of the Lake of the Woods; then set out on the Grande Traverse—find the lake covered with a sort of green scum or vegetable substance, which thickens as we proceed; at four miles from shore, try the temperature of water six inches below the surface, and find it to be 77° Fahrenheit; also measure the depth, which we find to be 35 feet; at 10 miles from shore, we sink the thermometer two feet below the surface, and find the temperature to be 71° Fahrenheit, while the depth at the same distance is 36 feet with a muddy bottom; at half-past 4, P. M., we reach a small island, where we dine, having made the Grande Traverse in four hours and forty minutes; there was not a breath of air as we crossed, and the cloudless sun beat down on the tepid water with great intensity. Notwithstanding the motion occasioned by the paddling, the thermometer in my canoe, and being in the sun, rose to 120°. After dinner we proceed on our course to Garden Island, now in sight. Clusters of beautiful islands appear to our right, some of which seem to be fertile, while others, on the contrary, are rocky and sandy, growing white pine, cypress and poplar. In the evening, we camped on Garden Island, where we saw considerable fields of Indian corn, and where the Indians informed us that they had cultivated the land from time immemorial, and that they had never once known an instance of their crops being injured by frost. This should be rather conclusive as to the climate being not unfavorable to the growth of corn of all kinds. On the following day we were detained for some time by a strong gale of wind which prevented us from leaving the island, and, on its abating a little, we had a visit from a large war party of Indians, who were encamped on an island not far distant. They came to question us as to our right to travel through their territory without asking their consent; but as the character and habits of these people has to be considered at some length, I shall not at present interrupt the subject under consideration, by alluding further to the interview we had with them.

From Garden Island to Rat Portage it is seldom that a view of the main land can be obtained. Islands appear at every turn, in a continuous labyrinth, which none but experienced guides could find their way through. These islands are, in some cases, covered with pine, while in others they are rocky and bare, or partially wooded. All accounts, however, agree in representing the main land as being in many places well adapted for settlement.

From Rat Portage, downwards, by the Winipeg River, for about thirty miles, to the White Dog Island, the country appears somewhat hilly and broken, there are, nevertheless, occasional places where settlements might be formed with advantage. At the White Dog Island, there is the Indian Missionary establishment of Islington, in charge of the Rev. Mr. McDonald, of the Episcopal church. At this gentleman's house I was detained by illness, until the 1st of October, and had, in consequence, a good opportunity of observing the progress of the season. The first frost which affected the colour of the foliage, in the least, occurred on the 22nd September; up to that time the most delicate plants were untouched. Mr. McDonald has a small farm, on which he grows wheat, potatoes, and a variety of articles, and several Indian families have settled beside him, who also cultivate the land for some extent, and with success.

Between Islington and Lake Winipeg, the shores of the river and the islands are, in most cases, rocky, and on approaching Lake Winipeg, the climate becomes evidently colder. The prevailing growth of timber in this long distance is poplar, but oak and elm are to be seen occasionally, and also balm of gilead, a species of poplar which invariably indicates a good soil. Much of this extensive country is, no doubt, well fitted for settlement; but it will be observed that the route which it is proposed to open, does not follow the course of the Winipeg, but stretches across from the north-west angle of the Lake of the Woods to the RedRiver Settlement. This tract, so far as we have yet explored it, in point of soil, is not inferior to most other parts of Canada.

To recapitulate, the country about Thunder Bay, and in the lower part of the valley of the Kaministiquia, may be regarded as in every way suited for a considerable settlement. The high region again, across which the route lies for about a hundred miles, from Dog Lake, to the western end of the Lake of a Thousand Lakes, may be cold, but there is nothing in the growth of the wood, or in the appearance of the soil, to indicate that it is not also, in many places, suitable for settlement. However, the climate is better on the Western slope of these high lands between the Lake of a Thousand Lakes and Rainy Lake.

About Rainy Lake and from thence to Rainy River and the Lake of the Woods, following from the latter place the proposed route across to Red River, the country is, I think, as well adapted for settlement as any other part of North America. The climate is good, the soil, in general, fertile, water power is to be had in abundance, and in the woods there are many valuable kinds of timber. This, of itself, is a country of considerable extent; the distance from the head of Rainy Lake, by the proposed route, being about two hundred and sixty miles, and yet it is but small and insignificant when compared to the vast region with which the road would open a communication.

The Red River Settlement, of which I shall now endeavor to convey some idea, commences a short distance above Lake Winipeg, and follows the Red River for about fifty miles. At Fort Garry this stream is joined by the Assiniboine, which flows from the westward. Up this river a continuous settlement extends for twenty-five or thirty miles, and from thence there are occasional houses to the Grand Portage, which is about seventy-five miles from Fort Garry. The population, by the last census, was 7000, but this, I believe, does not include the settlement at the Grand Portage, nor a small settlement on a stream called the Seine, which joins the Red River from the eastward. Neither does it comprehend a large number of Indians who encamp here in summer, nor a population of half breeds who follow the customs of their Indian ancestors, and live on the produce of the chase, without any fixed habitation, but who, nevertheless, regard Red River as their head quarters.

The soil throughout the settlement, and far beyond it in the prairies, is a rich alluvial deposit. But the extent of land under cultivation is not great in proportion to the population; nor is it to be wondered at, seeing that the settlers have no market for their surplus produce. They seem all, however, to have a great many horses and cattle, and there is scarcely a limit to the number they might keep, as hay and pasturage can be had to any extent in the prairies.

In other respects the settlement is far advanced; churches are to be met with at intervals, and there are several educational establishments, and a library. The importance of this little flourishing colony cannot be overrated, when considered in connection with the great prairie region beyond it. It will form a nucleus from whence settlements may spread in every direction; and it is at the commencement of what might be made, and will doubtless become, a great system of water communication. The Red River is navigable from this for a long distance to the south, beyond the United States boundary. To the north, there is no interruption to the further end of Lake Winipeg. The Assiniboine, which drains a great extent of the finest prairie land, is navigable for several hundred miles to vessels of light draught. The stream which flows from Manitoba Lake is navigable, and from Manitoba, I believe, there is no interruption to the Winipigoos Lake.

The Saskatchewan, which gathers its waters from a country greater in extent than the vast region drained by the St. Lawrence and all its tributaries, from Lake Superior to the Gulf, is navigable by either the north or south branch, for more than a thousand miles of its course, with the single exception of a few rapids near its confluence with Lake Winipeg. So mild is the climate on the south branch of this great river that the Indians hunt the buffalo on horseback all winter, and so little snow is said to fall, that snow shoes are seldom used.

That the extensive territory drained by the Saskatchewan and its tributaries, is fit for settlement, in as far as regards climate, is fully proved by the success which attends the farming operations which are carried on, although on a small scale, at the various trading posts throughout the country, and by the fact that the cattle and horses at these establishments are generally left to forage for themselves during the winter.

As regards the soil, from what is yet known of the country, there is not perhaps on the globe, so great an extent of territory so little broken by barren tracts. It is said indeed, that there are plains of drifting sand in some places, between the two great branches of the Saskatchewan, but the extent of these can only be ascertained on exploration.

Regarding the territory, however, in its general aspect, there is not in the universe a finer field for colonization. It has a salubrious climate, and the soil in many places, as at Red River, is unsurpassed in fertility. Iron ore, coal and salt, these indispensible articles to the wants of a cummunity, are to be found in abundance, and the whole territory, from Lake Winipeg to the base of the Rocky Mountains, is intersected by navigable rivers and lakes.

Having thus briefly and imperfectly described the country with which it is proposed to open a communication, I would respectfully invite your attention to the necessity of coming to some understanding with the Saultaux Indians, who inhabit the country about Rainy Lake and the Lake of the Woods. These people are well informed as to the object of our visit, and they have conceived the idea (to some extent reasonably enough) that the opening up of the communication and colonization of the country would deprive them of their hunting grounds, and impressed with this conviction, they threaten to stop us even in carrying on the surveys and explorations, and indeed they have done so in one instance already. I have alluded to an interview which we had with a large party of them at the Lake of the Woods, I shall now, with your permission, describe it more particularly, as it will inform you in some measure as to the character of these people, and the views which they entertain.

Before leaving Fort Francis it had been arranged that Professor Hind, the chief of the geological branch of the expedition, and I, should cross the country from the Lake of the Woods to Red River. We accordingly provided ourselves with two small canoes, each manned with two men, one of whom was an Indian guide engaged for the occasion. In the mean time we had been informed that a war party of the Saultaux were out against the Sioux, with whom they are constantly at feud, and that it was probable we should meet them, as we were going by the route which they usually follow on such excursions. Having encamped on Garden Island, in the Lake of the Woods, we were detained during the greater part of the following day by a gale of wind, which prevented us from leaving it. In the mean time our guide had conversed with some Indians, and they carried the intelligence of our arrival to the party just referred to, who were encamped on an Island some miles off. In the morning sixteen painted warriors made their appearance, and told us that their chiefs desired to see us on their Island, in order to learn from us the reason and the object of our visit. This invitation we declined, at the same time making the messengers a present of some tobacco, and such little articles as we could spare. Our reply was sent back to the chiefs, but most of those who had come remained with us, squatting themselves about the camp fire and talking of various subjects. A little after noon, the wind having somewhat abated, we observed thirteen canoes putting off from the Island where the main body of the party was encamped, and as they approached Professor Hind and I arranged that he should keep notes of what took place while I conversed with the Chiefs, through the medium of one of the men, who was an excellent interpreter and quite familiar with their language. When the Indians arrived, they drew their canoes on the shore and coming up to our tent, seated themselves in a semicircle about the fire. I do not think I ever saw a finer body of men, they were tall, some of them over 6 feet, and well formed, and they had a free, easy, and independent air about them, very unlike the subdued bearing of the Indians in the settled parts of Canada.

With the exception of the principal chief they all had their faces painted in every variety of colour, in which however black and red were the predominant. They were evidently arranged in their best attire, most of them having hawks' feathers in their hair, which again was painted and tied with ornamented bands, except the scalp lock, which was painted red and left free, some of them were completely dressed, while others had only on a pair of embroidered leggings with a blanket thrown carelessly about their naked forms. The principal chief alone, an aged man, wore no paint or ornament of any kind.

When they had all squatted themselves, I sat down in front of them, and after the pipe of peace, which, with them, is always a preliminary to discussion, had been smoked, the old chief rose and said, "What brings the white man to our country?" I replied that we were travelling by order of the Canadian Government, and that we were on our way to Red River. He then said, "My children—those you see about you are my children—have desired to have a conference with you; I leave them to speak for themselves." Another chief then spoke, and alluding in the first place to the deeds of their ancestors, asked us if we had seen a grave at the Great Falls, and said that that grave was the resting place of a mighty chief who had conquered all this country; that they were all descended from him, and that he had left them the woods and rivers as an inheritance, which they would sooner lose their lives than relinquish. He then taxed us, very pointedly, with our want of courtesy in sending expeditions to the right and the left, in short wherever we chose, through their territory without even so much as coming to consult them or ask their consent; and concluded by saying that we must go by the old route. I replied that we had no wish to interfere with their privileges; that the director of the expedition had been pressed for time when he passed, but that I had no doubt he would make a point of seeing them when he came again; and then appealed to them, whether, as Indian chiefs and warriors, they should not rather forward the stranger on his way, than thus to stop him when they beheld him powerless. This had evidently a great effect upon them, for they consulted and argued a good deal among themselves before replying; another chief then spoke, and said that they all regretted very much the necessity of stopping us from going by the way which we had intended, but that they had made up their minds, and could not alter their decision; they saw what befel the Indians in other lands,—a few white men first examine the country and its productions; others come after them, and the result always was, that the Indians lost the land, and the country which they had inherited from their fathers; he concluded by saying that we must go by the route which the white man had hitherto followed. It would be tedious to detail every thing that passed in a conversation which lasted more than two hours. I argued the point with them in every way that I could think of, but they were very acute, and always ready with a reply; we tried the effect of presents, and said that if they sent two of their young men with us as guides, we should send them home with a quantity of tea, and tobacco, and whatever else they might reasonably fancy. This they haughtily refused, saying that we might keep our presents, and reiterating that, as they were all of one mind, nothing could induce them to alter their decision. I then said to them, that as they had denied us the privilege of going the way we had intended, the least they could do was to furnish us with guides, to go by the Winipeg, as we were totally unacquainted with the route. Upon this the old chief at once indicated two young men, whom he ordered to accompany us; they obeyed with alacrity, and were ready for the journey in a few minutes, and I must say that it seemed to afford the whole party the greatest pleasure to have it in their power to oblige us in one way, after having thwarted us in another. During the conference they were grave and silent, only one speaking at a time, and, although if they had been evilly disposed, they were the stronger party, they treated us throughout with the utmost deference and respect. The conversation or rather council once over, however, they crowded about the tent, and became quite friendly and familiar; one old chief made us promise that we should never come to the

Lake of the Woods without going to see him on his island. We then divided the remainder of our tobacco among them, and after a friendly smoke, they all shook hands with us, wished us a prosperous journey, and departed.

As the tribe to which these Indians belong, inhabit a considerable part of the country which it is proposed to open, it becomes a matter of importance to learn their character, and ascertain the manner in which they may be best conciliated. This branch of the tribe, as I learn from a clergyman who has spent many years in a vain attempt to convert them, numbers about 800 warriors or hunters; but they are spread over an extensive country, and except in summer, when the fish is abundant in the lakes and rivers, they cannot collect in large numbers; they are the remnants of a very old and once powerful tribe, whose chief had his residence at Rainy Falls, and held sway from Sault Ste. Marie to the confines of the great prairies. They are generally accounted to have been among the bravest and most warlike of the Indian tribes, until that fearful scourge of the Indian race, the small pox, reduced them to their present diminished numbers. They are still proud of their traditions, and very sensitive as to any encroachment on what they conceive to be their rights, and they still adhere pertinaciously to their old customs and ceremonies; every attempt to convert them to Christianity has failed except in the case of Mr. McDonald, at Islington, who has a congregation of about 50, and Mr. Chroné, at Lake Superior, who has also a small congregation. But these latter can be hardly accounted as belonging to this branch of the tribe, for they never meet them in council, and have but little communication with them.

In dealing with them, therefore, it must be borne in mind that they are still the same barbarians that they ever were, and that, although they are perhaps among the most intelligent of the Indian tribes, and have many good traits of character, they are uncertain in disposition, and like all savages, ready to resort to violence on but slight provocation.

The United States Government, as I understand, has purchased, from the same tribe, a tract of land at the Grand Portage, for which they pay them a yearly sum in the shape of presents, and this I think would be the best way of dealing with the Indians at Rainy Lake and the Lake of the Woods. A tract of, say ten miles in depth, might in the meantime be taken up along the whole route, and if for relinquishing so much, they were paid in yearly presents of the articles they most value, such as blankets, tobacco, powder, shot, &c., they would find it their interest to offer no opposition to the operations which it might be necessary to carry on. In the meantime I think the surveys can be carried out, by keeping up a friendly intercourse with them. Just before the close of the navigation, I had a visit from another Saultaux Chief, who lives in the direction of Pembina. He came attended by 16 followers, all of whom had their faces painted yellow with black streaks down across the throat and cheeks. On introducing himself, he said that he had heard of the strangers from Canada and that he had come such a long journey to bid them welcome to the country. I immediately got him and his party some refreshments, and when they had partaken of these gave them some trifling presents when they went off, as I since learn, mightily pleased with their reception.

With regard to the operations which are now being carried on, two of my assistants, Mr. Gaudet and Mr. Russell, with a well organized party, are exploring the country between this place and the Lake of the Woods, and in order more effectually to accomplish this, they are running a line direct across on either side of which they examine the ground as they proceed. This line is now opened for more than half the distance through, and, so far, the only serious obstacle to making a road that has been met with, is a morass about 30 chains in width, which, however, can be avoided by making a *detour*. My chief assistant, Mr. Wells, has been aiding me for some time past in compiling the map which I send with this report. He will now be engaged for a few weeks in surveying the country from Fort Garry by the Red River and Winipeg Lake, to the mouth of the Winipeg. When this survey, with the line to the Lake of the Woods, is completed, and connected with the survey of the boundary commissioners from Lake Superior, the geography of this part of the country will be accurately established. When the work now in hand is completed, we shall endeavor to explore the country between the Lake of a Thousand Lakes and Rainy Lake. With regard to the accompanying map, the canoe route from Lake Superior to Rainy Lake is laid down from a sketch which I took in passing through. The Nipigon River, the stream entering the head of Black Bay, the two main tributaries of the Kaministiquia, Fish River and the Matawin, together with the upper tributaries of Dog River and the lower part of the Lake of a Thousand Lakes, are from Indian charts ; from Rainy Lake to the lower end of the Lake of the Woods, the plan is reduced from the boundary survey, while the Winipeg River and Lake to the mouth of Red River are from a sketch taken by Mr. Wells.

The annexed statement of levels can only be regarded as a close estimate, except, where, as stated, actual measurements took place.

My assistants, Messrs. Wells, Gaudet and Russell have all exerted themselves to forward the objects of the expedition to the utmost of their ability. Mr. De Salaberry, the bearer of this, although attached to another branch of the expedition, has been very energetic, and has rendered us all the most valuable assistance, and he now undertakes the long journey to Canada with the geatest alacrity. I have, therefore, much pleasure in recommending him to your favorable notice.

I have the honor to be, Sir,
Your obedient servant,
(Signed,) S. J. DAWSON.

The Honorable
The Commissioner of Crown Lands, &c.

Levels of the Kaministiquia and Winipeg Rivers, by the Canoe Route, from Lake Superior to Lake Winipeg.

No.		Distance. Miles.	Distance. Chains.	Rise in feet.	Height above Lake Superior.
1...	Estimated rise, from Lake Superior to lower end of Kakabeka or Grand Falls Portage :— From Lake Superior to the first Rapid on the Kaministiquia River, the rise is supposed to be 4 inches per mile, and the distance about 12 miles— Dist. 12, Rise in feet 4·00 1st Rapid, estimated to be......... ¼ 2·50 Left Current, for two miles ...... 2 1·50 2nd Rapid .... ¼ 3·00 3rd " .... ¼ 1·50 4th " .... ¼ 3·50 5th " .... ¼ 3·00 6th " .... ¼ 3·00 7th " .... ¼ 3·00 8th " .... ¼ 5·00 9th Swift Current..................... 1¼ 2·00 10th Paresseux Rapid, measured ¼ 5·10 11th Rapid .... ¼ 2·00 12th " .... ¼ 2·50 Three miles from this to the next Rapid the current being considerable, say, 6 in. per mile ... 3 1·50 13th Rapid .... ¼ 6·00 14th " .... ¼ 3·50	22	45·29	53·20	53·20
2...	Kakabeka Falls, including the Rapids above and below from the lower to the upper end of the Portage, measured	....	62·00	119·05	172·25
3...	Portage Ecarte, from the lower to the upper end, measured.....................	....	37·61	62·65	234·90
4...	1½ mile quiet water, 4 inches per mile	1	40·00	0·50	235·40
5...	Nicolet Portage, the canoes were towed up the Rapid which passes this Portage, rise, including current above and below, estimated to be	....	10·00	6·50	241·90
6...	Rapid, which the canoes are poled up, estimated to be	....	10·00	4·00	245·90
7...	½ mile moderate current to Island Portage, including a small ripple	....	40·00	1·00	246·90
8...	Island Portage, measured	....	3·00	12·62	259·52
9...	Short Portage, immediately above the Island Portage, measured	....	3·00	6·90	266·42
10...	Mokaman Falls, measured.....................	....	4·00	19·25	285·67
11...	Above the Mokaman Falls, four Rapids occur in the space of a mile and a half, ascent in which was estimated as follows :— 1st Rapid, which the canoes are towed up 3·00 2nd " " poled up 2·00 3rd " " towed up 3·00 4th " " poled up 4·00	1	40·00	12·00	297·67
12...	Half a mile of current, including a small ripple	....	40·00	1·00	298·67
13...	3 miles moderate current, supposed to be 4 inches per mile	3	....	1·00	299·67
14...	Half Portage, ascent estimated to be about 5 feet in a distance of 10 chains	....	10·00	5·00	304·67
15...	A mile of quiet water, say..................... 0·50 Rapid, which canoes are poled up .... 8 ch. 4·00	1	8.00	4·50	309·17

Levels of the Kaministiquia and Winipeg Rivers, &c.—(*Continued.*)

No.			Distance.		Rise in feet.	Height above Lake Superior.
			Miles.	Chains.		
16...	Three miles of quiet water, supposed to be ...	1·00				
	Rapid below old Matawan Fort	3·00	3	....	4·00	313·17
17...	Two little Rapids occur within a mile above the Matawan, rise, including current, between them	6·00				
	Two and a half miles moderate current to next Rapid, say 4 inches per mile	00·83	3	40·00	6·83	320·00
18...	Rapid Fall, estimated..		....	5·00	4·00	324·00
19...	Two miles of considerable current, say 6 inches per mile		2	....	1·00	325·00
20...	Rapid, which canoes are poled up, estimated to be	4·00				
	1¼ mile considerable current to next Rapid...	00·75	1	40·00	4·75	329·75
21...	Two Rapids occur within half a mile below the Little Dog Portage, the rise in which is about—					
	1st Rapid..	3.00				
	2nd " half portage..............................	4·00				
	Intermediate current	1·00	....	40·00	8·00	337·75
22...	Little Dog Portage, from foot to head, measured......		....	8·00	14·94	352·69
23...	Rapid immediately above Little Dog Portage, estimated		....	3·00	2·50	355·19
24...	Three miles smooth water to the Great Dog Portage, supposed to be about 4 inches per mile		3	....	1·00	356·19
25...	Great Dog Portage, from water level at the lower end to Dog Lake, measured		1	73·00	347·31	704·00
26...	For the succeeding 8 miles across Dog Lake, there is no perceptible current, and from thence for 21 miles upwards, the river of the same name winds through a marsh, with a very little current. The total rise to Cold Water Lake I estimate as follows.. 21 miles.					
	Through marsh 2 inches per mile	3·50				
	Swift run at head of marsh	1·00				
	1st Rapid, ¼ mile above swift run, 3 chains in length, measured..............................	3·80				
	2½ miles smooth water, 2 inches per mile...	00·41				
	2nd Rapid, Jourdain, measured ...... 5¼ ch.	8·60				
	3 miles dead water from thence to Cold Water Lake, 3 inches per mile............	00·75	34	63·00	18·06	722·06
27...	Prairie Portage from Cold Water Lake, the source of this branch of Dog River, to a small Pond discharging itself into the Savanne River, being the summit water level by this route, between the water of the Kaministiquia and the Winipeg, measured		2	50·00	157·12	879·18
					Fall in feet.	Total fall from Prairie Portage.
28...	Middle portage measured..		....	38·50	16·39	16·63
29...	Savanne Portage, from the small lake at the west end of middle portage to the Savanne River measured..		1	41·00	31·69	48·08
30...	From the Savarne Portage to Lake of a Thousand Lakes, the descent for distance of twenty-four miles, the current being moderate throughout, is supposed to be about four inches per mile.........		24	....	8·00	56·08
31...	In the Lake of a Thousand Lakes the current is supposed to be about one inch per mile for twenty miles..		20	....	1·66	57·74

Levels of the Kaministiquia and Winipeg Rivers, &c.—(*Continued.*)

No.		Distance.		Fall in feet.	Total fall from Prairie Portage.
		Miles.	Chains.		
32...	Baril Portage, from the Lake of a Thousand Lakes to Baril Lake, ascent measured 1·86, distance 16·85 chains	....	16·85	1·86	55·88
	In Baril Lake, the discharge being very small, in proportion to its size, there is supposed to be no appreciable current; the length of the lake is about	8	40·00	....	....
33...	Portage Brulé, from Baril Lake to Windegoostegoon Lake measured	....	21·00	47·02	102·90
34...	From the Brulé to Portage Français, a distance of ten miles, a succession of small lakes occur, with a moderate current between them, and at one place a little rapid, fall supposed to be six feet in ten miles	10	....	6·00	108·90
35...	French Portage, from the brook at the east end to the lake at the west, measured	1	60·00	99·71	208·61
36...	Lac Demarais or Pine Portage, measured	....	26·00	6·90	....
	Thence across small pond to Deux Rivières portage there is no appreciable current.				
37...	Deux Rivières Portage measured	....	32·00	117·22	332·73
38...	From Deux Rivières Portage to the first rapid below Sturgeon Lake, a distance of about sixteen miles, there being a little current occasionally in the narrowest parts, allow, say, one inch per mile	16	....	1·33	334·06
39...	Rapid Decharge, half portage, measured	....	11·00	4·51	338·57
40...	Second rapid below Sturgeon Lake measured .... 3·15 6·21 Intermediate current between it and the first rapid .... 5·00 0·50	....	8·15	6·71	345·28
41...	Two rapids, which the canoes run, occur below the above. First rapid estimated .... 2·50 Second do .... 4·00 Intermediate swift current .... 1·50	2	....	8·00	353·28
42...	3½ miles to Tanner's rapid or reef portage, including a swift run, say	3	40·00	1·75	355·03
43...	Tanner's Rapid, estimated	....	4·00	6·00	361·03
44...	From Tanner's Rapid to Island Portage, the current being considerable, say six inches per mile	3	60·00	1·87	362·90
45...	Island Portage measured	....	0·13	10·06	372·96
46...	2½ miles to Pine Lake, the current being considerable, say six inches per mile	2	40·00	1·25	374·21
47...	Pine Lake, 7½ miles in length, allowing two inches per mile	7	40·00	1·25	375·46
48...	From Pine Lake to Snake Falls, the river being very rapid for a distance of two miles, fall estimated to be seven feet	2	....	7·00	382·46
49...	Snake Falls measured	....	5·00	12·14	394·60
50...	Three miles from Snake Falls to the second rapid below Pine Lake, a strong current prevailing, say nine inches per mile	3	....	2·25	396·85
51...	Second portage below Pine Lake measured	....	8·00	9·88	406·73
52...	In the next navigable space, between the second portage below Pine Lake and the high falls, two small rapids occur, which, with the intermediate current, were estimated as follows: First rapid .... 2·00 Second do .... 2·50 Six miles intermediate current, six inches per mile .... 3·00	6	....	7·50	414·23

LEVELS of the Kaministiquia and Winipeg Rivers, &c.—(*Continued.*)

No.		Distance. Miles.	Distance. Chains.	Fall in feet.	Total fall from Prairie Portage.
53...	High Falls measured	....	5·80	16·08	430·31
54...	The succeeding space of five miles, in which two chains of heavy rapid occur, was estimated as follows:				
	One chain of rapids ¾ mile in length............ 8·00				
	Two chains of rapids, one mile in length...... 9·00				
	3¼ miles intermediate strong current nine inches per mile.. 2·43				
		5	....	19·43	449·74
55...	6½ miles through Lac la Croix, supposed to be one inch per mile..	6	40·00	00·54	450·28
56...	Baré Portage, from Lac la Croix to a pond discharging itself into Rainy Lake measured..............	....	6·54	8·55	458·83
	From pond to Rainy Lake no fall, but a portage of eleven chains in length........................	....	11·00	....	....
57...	Rainy Lake, forty miles from the lower end to the upper end, reckoning from Baré Portage, the current not being perceptible except in the narrow parts, say one inch per mile.................	40	....	3·33	462·16
58...	From Rainy Lake to Rainy Falls two small rapids occur.				
	Fall in first rapid at foot of Lake, say.........2·50				
	Fall in second rapid..................................3·00				
	Two miles moderate current.......................00·50				
		2	....	6·00	468·16
59...	Rainy Falls, at Fort Francis, measured....................	....	7·77	22·88	491·04
60...	In Rainy River, between Fort Francis and the Lake of the Woods, two small rapids occur.				
	The first, the Manitou, having a fall of about...2·50				
	And the Long Rapid....................................3·50				
	The intermediate current is considerable, but the volume of water being great, it would be produced by a fall of four inches per mile, which, for sixty-four miles, would give...21·33				
		64	....	26·33	517·37
61...	In the Lake of the Woods, sixty-four miles in length, the fall may be about one inch per mile............	64	....	5·33	522·70
62...	Rat Portage measured..	....	12·95	16·00	538·70
	8½ miles to Les Dalles, four inches per mile............	8	40·00	2·83	541·53
63...	Les Dalles, estimated..	....	40·00	4·00	545·53
64...	Twenty-four miles quiet water, supposed to average about two inches per mile........................	24	....	4·00	549·53
65...	Grande Décharge, estimated..................................	....	30·00	6·00	555·53
66...	2½ miles from Grande Décharge to Yellow Mud, including a small rapid, estimated....................4·25				
		2	40·00	4·25	559·78
67...	Yellow Mud Falls measured...................................	....	5·20	22·02	581·80
	Rapids below Yellow Mud Falls estimated...7·00				
	2½ miles to Pine Portage, six inches per mile...1·25				
		2	40·00	8·25	590·05
68...	Pine Portage measured..	....	10·50	8·24	598·29
69...	Rapids below Pine Portage—Cave Rapids..........4·00				
	From Pine Portage to Portage de l'Isle, twenty one miles, estimated to be three inches per mile 5.25				
		21	....	9·25	607·54
70...	Portage de l'Isle, estimated..................................	....	20·00	3·40	610·94
71...	From Portage de l'Isle to Chute à Jacquot, twenty-five miles quiet water, supposed to be about two inches per mile.. 4·16				
	A small rapid.. 1·00				
		25	....	5·16	616·10
72...	Chute à Jacquot measured....................................	....	3·00	12·97	629·07
73...	Rapid immediately below Chute à Jacquot.........1·00				
	Seven miles dead water, say two inches per mile...1·16				
		7	....	2·16	631·23

Levels of the Kaministiquia and Winipeg Rivers, &c.—(*Continued.*)

No.		Distance.		Fall in feet.	Total fall from Prairie Portage.
		Miles.	Chains.		
74...	First Pointe des Bois.......... 12·72 10·50 Second do .... 4·90 19·92 Rapid .... 1·50 Third Pointe des Bois.......... 2·80 7·80 Intermediate between the points.......... 1·20 2·50	1	40·42	42·22	673·45
75...	Four miles from third Pointe des Bois to Slave Falls, quiet water, say three inches per mile..........	4	....	1·00	674·45
76...	Slave Falls measured..........	....	30·40	19·80	694·25
77...	Six miles from Slave Falls to La Barrière, estimated to be four inches per mile.......... 2·0 La Barrière measured.......... 4·97 Small rapid below la Barrière.......... 1·00	6	....	7·97	702·22
78...	Six miles from La Barrière to Otter Falls, supposed to be about four inches per mile.......... 2·00 Otter Falls, estimated.......... 3·00	6	....	5·00	707·22
79...	In the succeeding eight miles, from Otter Falls to the Seven Portages, three rapids occur, supposed to have a fall in a distance of two miles of... 6·50 Six miles intermediate strong current, supposed to be nine inches per mile.......... 4·50	8	....	11·00	718·22
80...	Seven Portages. First portage measured.......... 4·20 10·23 Second do do .... 3·00 8·47 Intermediate rapid estimated.......... 2·00 Third portage measured.......... 5·20 5·60 Fourth do do .... 7·68 Fifth and sixth portage measured.......... 11·03 Seventh portage measured.......... 4·75 Distance past the four last portages... 60·00 Two miles rapid between portages estimated to have a fall of.......... 4·00	2	72·40	53·76	771·98
81...	From the last of the Seven Portages to Galais du Bonnet, the distance is estimated at eighteen miles, for the first eight miles current supposed to be about six inches per mile.......... 4·00 Ten miles smooth water in Bonnet Lake, say two inches per mile.......... 1·66	18	....	5·66	777·64
82...	Galais du Bonnet— 1st Galais, measured .... 7·30 7·31 2nd " " .... 4·00 5·00 Between Falls, estimated.......... 40·00 1·00	....	51·30	13·31	790·95
83...	Four miles considerable current to Grand Bonnet, 6 inches per mile	4	....	2·00	792·95
84...	Grand Bonnet, measured	....	50·00	34·23	827·18
85...	30 chains from Grand to Petit Bonnet, fall supposed to be .... 1·00 Petit Bonnet, measured.......... 13·00 8·25	....	43·00	9·25	836·43
86...	Four miles from Petit Bonnet to White Mud Portage, strong current, say 9 inches per mile..........	4	....	3·00	839·43
87...	White Mud Portage, measured	....	15·50	13·05	852·48
88...	3¼ miles, from White Mud Portage to 1st Silver Falls, a considerable current prevailing, say 6 inches per mile	3	40·00	1·75	854·23

Levels of the Kaminisquia and Winipeg Rivers, &c.—(*Continued.*)

No.		Distance.		Fall in feet.	Total fall from Prairie Portage.
		Miles.	Chains.		
89...	Silver Falls— 1st Fall, measured .... } 40 chains. 6·06 2nd " " .... } 15·56 Two pitches below Falls, estimated .... 4·00	....	40·00	25·62	879·85
90...	5 miles from Silver Falls to Pine Portage, the current being moderate, say 4 inches per mile ...	5	....	1·66	881·51
91...	Pine Portage, measured	....	12·00	8·35	889·86
92...	8 miles from Pine Portage to Fort Alexander on the level of Lake Winipeg, the current being gentle, allow, say 3 inches per mile	8	....	2·00	891·86

(Signed,) S. J. DAWSON.

RED RIVER SETTLEMENT,
15th March, 1858.

SIR,—I have the honor to acknowledge the receipt of your letter of the 30th January, enclosing a draft on the Honorable Hudson's Bay Company for five hundred pounds (£500) sterling, which has been duly placed to my credit at that Company's establishment at Fort Garry.

I enclose a report on the explorations which I am engaged in carrying on, which after you have taken cognizance of its contents, you will oblige me by handing to the Hon. the Provincial Secretary.

Your instructions with regard to the exploration of the Rat and Roseau Rivers, shall be duly attended to immediately on the breaking up of the ice.

I beg leave to invite your notice to the suggestions which I have offered in reference to the further explorations in which it occurs to me that I, and the party under my charge, would be most advantageously employed between the time of the completion of the service just alluded to, and your arrival at Red River.

I have handed Mr. Napier a receipt for the instruments, and other articles, which in accordance with your instructions, he has placed in my charge.

I think with you that, considering the work in contemplation, I shall require four assistants; and in accordance with your suggestions will retain Mr. De Salaberry.

Trusting that the extent of exploration accomplished, so far, during the winter, will meet with your approval, and that of the Government.

I have the honor to be, Sir,
Your obedient servant,
(Signed,) S. J. DAWSON.

George Gladman, Esq.,
Director Red River Settlement,
Hon. Provincial Secretary's Office,
Toronto.

RED RIVER SETTLEMENT,
15th March, 1858.

SIR,—In accordance with your memorandum of instructions, transmitted to me by the director of the Red River Expedition, I beg leave to submit to your notice through him, for the information of the Government, the following report on the progress which, with the aid of the party under my charge, I have made in the exploration of this part of the country since the date of my last report.

The accompanying rough sketch, which is hastily made up from the field notes, shows the position of Lac Plat, and the character of the region explored between that lake and the Red River Settlement.

In its general aspect the country is flat, presenting an appearance of an almost uniform level, with but slight elevations. It rises, nevertheless, though gradually and almost imperceptibly, to an elevation of nearly 400 feet above the level of Red River; and as there must be everywhere a sufficient fall for drainage, the prevalence of marshy ground, as indicated on the map, can only be accounted for on the assumption that the surface soil rests on a bottom impervious to the absorption of water, which, indeed, we have found to be generally the case where we have dug down in the low grounds.

The exploratory line which, as explained in the report just referred to, I conceived it expedient to run in the first instance, is represented on the plan by a black dotted line; while the line dotted in red indicates the route which, on a critical examination was found to be the most favorable for a road.

The total distance from Fort Garry to Lac Plat, in a direct line is 86 miles; from the Rapids Church it is 83¼ miles, and by the route it is proposed to follow as the line of road, 91½. By the latter route 31½ miles would be over open prairie, and 60 miles through a wooded country. Wheeled vehicles can already be driven over the prairie with facility, except in very wet weather, and the wooded portion of the route is in every way favorable for a road. From the prairie to the White Mouth River, the soil is good, consisting, in general, of a dark loam, mixed with small angular pebbles of limestone. For some distance to the eastward of that river the country is of the same character. It then becomes more marshy, and on approaching Lac Plat, the growth of timber indicates a poorer soil. The whole region having been swept at no distant period by fire, is not heavily wooded; and, as is usual in such cases. the prevailing growth on the higher grounds is poplar, while in the lower, cypress and spruce predominate. On the worst part of the line between White Mouth River and Lac Plat there is not over four miles which can properly be called swamp, and even where the ground partakes of that character, it presents no serious obstacle to the construction of a road, for beneath the surface coating of vegetable mould, the subsoil is either of a stiff clay, or coarse sand mixed with waterworn pebbles, as will be seen on reference to the annexed extract of a letter from my chief assistant, Mr. Wells, who spent nearly two months in examining the country to the east of the White Mouth River.

It will be seen, on reference to the map, that a line drawn from the Rapids Church to Lac Plat, would pass nearly parallel with the east branch of White Mouth River. It therefore appeared to me to be advisable to examine the country between the Rapids and the point of confluence of the east with the main branch of that stream, and also to ascertain whether and to what extent the east branch was navigable. This route was accordingly examined, but on exploration it was found to be unfavorable throughout a considerable portion of its extent. A beautiful wooded country of the richest land conceivable extends for about 25 miles eastward from the Rapids, but on approaching Broken Head River, the ground becomes marshy and maintains that character to the White Mouth River, the east branch of which, near its confluence with the main stream, is too rough to be available for either boat or canoe navigation.

Failing in finding a suitable line of communication by this route, I directed the explorations to the South, and in as far as regards the discovery of ground suitable for a road, with the most satisfactory result. The route indicated on the plan by the red dotted line, whether as regards economy of construction, the gentleness of grades that would be necessary, or the general adaptability of the land bordering on it for settlement, is, I may say, all that could be desired for a line of road: and the ground is throughout so even that a railroad will be easily constructed when colonization shall have advanced so far as to render such a work necessary.

By actual measurement the distance from Red River to the monument erected by the boundary commissioners at the north-west angle of the Lake of the Woods, is less by 16 miles than it is represented to be on the maps with which we were provided. So that assuming the position of the monument to be accurately established by careful astronomical observation, too great a longitude by about 21 minutes has been assigned to Red River. The mistakes to which this error has led, we will be enabled to correct when the surveys and explorations now in progress are completed.

In my report of the 18th December, I mentioned that the Indians who inhabit the country in the direction of the Lake of the Woods, objected to surveys being carried on in their territory. When we had reached White Mouth River with the line, they sent us a haughty summons to stop our operations, and commanded the Indians who were in the party to leave us, under pain of incurring their serious resentment. This summons we disregarded, but most of the men who were with us, taking alarm, left. I replaced them with others on whom I thought I could rely, and continued the work. In the meantime, some of our party went through to Lac Plat, where they saw several Indian families; at first they met with a cold and sullen reception. Gradually, however, the Indians became more friendly, and ere the survey was completed, they rendered us the most valuable assistance, in pointing out the direction of the streams, and the position of the marshes and dry grounds. Some of them even came to visit me here, and when our people were withdrawn they parted with them apparently with as much regret as they had evinced displeasure at seeing them in the first instance.

In carrying on the explorations, two small parties were employed, one under the direction of Mr. Wells, to the eastward of White Mouth River, and the other under Mr. Gaudet, between that stream and this place. On the third instant, having completed the surveys, in as far as they could be accomplished during winter, both parties came in. By the 8th I had them again equipped, and sent Mr. Gaudet to scale by the Red River and Lake Winipeg, to Fort Alexander, and in this service he is now engaged. On his return he will scale Red River, to the boundery line at Pembina, noting the points of confluence of the Roseau, Rat, and other tributary streams. Mr. Wells is now on the Assiniboine, having been despatched at the same time to make a cursory survey of that River for two hundred miles or so, to the westward, or as far as the season will permit. These surveys will be attended with but an inconsiderable outlay, Mr. Gaudet having only three men with him, and Mr. Wells but two, with a train of dogs.

Immediately on the breaking up of the ice, I shall, in conformity with the instructions transmitted me by the director of the expedition, examine the Rat and Roseau Rivers, but after this service is completed there will still be an interval of some time, which can be employed in further exploration before Mr. Gladman can arrive from Canada, I would, therefore, respectfully recommend the expediency of occupying this time in exploring in the direction of the Manitoba and Winipegoos Lakes. The country bordering on these extensive sheets of water is represented as being admirably adapted for settlement, and presenting as they do such an extent of inland navigation, it is of importance to ascertain whether the stream which connects them with Lake Winipeg is also navigable, and whether, as some voyagers report, there is a connection at high water, between Winipegoos Lake and the great Saskatchewan River. If it should be judged expedient to carry the exploration so far, it would not occupy much additional time to take the levels, and ascertain the precise nature of the obstructions at the grand rapid, which is said to be the only impediment to the navigation of the Saskatchewan, between Lake Winipeg and the base of the rocky mountains.

I could accomplish this exploration, and return here to meet the director of the expedition, by the 15th of June, which is about the earliest date at which canoes usually arrive from Lake Superior. If instructions on this subject were mailed at Toronto not later than the 16th April, they would reach this about the 13th May, by which time I shall have completed the exploration of Rat and Roseau Rivers.

I have the honour to be, Sir,
Your most obedient servant,
(Signed,) S. J. Dawson.

The Hon. the Provincial Secretary,
Toronto, C. W.

Extract of a letter from Mr. Alexander Wells, Assistant to Mr. Dawson, dated White River, 17th February, 1858.

Lac Plat is more a Bay of the Lake of the Woods than a separate Lake, its discharge being through a long deep bay, which in some places has the appearance of a broad river. This bay terminates in two ripples, distant from each other twenty-four chains. The first ripple is about twenty-three miles from the end of Gaudet's line, upon a course of about N. 70° E. I scaled through, but it is too cold to make a plan here. The fall in the first ripple is twelve or fourteen inches; in the second it is from five to seven inches, not more. The first ripple from deep water to deep water, is one hundred feet. The channel is sixty-six feet wide, and there is an average depth of two feet of water over the bar. The bar is of a loose friable slate, soft and easily removed. The second bar is only forty feet from deep water, in other respects it does not vary from the first. The water between and on either side of the ripples is very deep. I was surprised at the small quantity of water discharged from so large a lake, and searched for another outlet, but found none. The Indians assured me that there was no other discharge. They also said that at high water the current would be for some days from the Lake of the Woods into Lac Plat.

I had collected quite a lot of specimens, intending to send them by this opportunity, but my man has unfortunately sent the bag in which they were kept to the shanty. A specimen of the slate in the bar at the outlet of Lac Plat is, amongst others, in this bag. I send you, however, two specimens from the N. W. side of Lac Plat. The quartz I wish you would examine closely, as I think it contains sulphate of copper; the other is a kind of a flint, which the Indians here use for arrow heads.

In the Bay of the Lake of the Woods, into which Lac Plat discharges itself, there is a small cut of trap rock, with veins of jasper. On one or two Islands in Lac Plat, I observed a coarse red granite, the rest is all slate, more or less resembling freestone.

From the first lake to the N. E. branch of the White River, I dug holes upon every mile, so as to be able to state accurately the nature of the surface and bottom earth; the latter is a whitish yellow clay, the surface is of a black vegetable mould, varying in depth from two inches to three feet; the depth of three feet occurs only once, and from the nature of the timber, I am certain that it does not extend more than three quarters of a mile. Over the whole distance there may be an average of ten inches of black mould on top of the clay. I examined the N. E. branch of the White River for about ten miles, westward from where the line crosses it. After which I returned by the line, as I had not finished what I wished to do in that quarter. I found that the river diverges very slowly from the line, as at that distance it is not more than four and a half miles north of it. I intend to start from here in the morning, and to complete this part by following the river to where I turned the other day. So far as I saw the river, it is not very crooked, is from forty to sixty feet wide, has from six to ten feet water, with but little current, and has banks rising to a height of from five to eight feet above the ice. All the streams here have high banks. Those at the main White River are forty or fifty feet in height.

After this I returned to the line where it crosses the river, and examined it from the N. E. branch to this place, in the same manner that I had previously examined that portion of it between the Lake and River. I found the surface earth to be of the same description, but not so thick, as in several cases it is not over an inch or two in depth for two or three miles. The sub-soil is of a totally different character, being of a whitish grey sand, in some places fine, and in others coarse and waterworn. The bottom changes immediately on crossing the N. E. branch.

It is a mistake to suppose that all the open land here is bottomless swamp. I found in several other instances that there were only from twelve to fifteen inches of black mould, or wet coarse sand.

(Signed,) ALEXANDER WELLS.

S. J. Dawson, Esq.,
Red River Settlement.

SECRETARY'S OFFICE, 20th April, 1858.

SIR,—I have the honour to acknowledge the receipt of your letter of the 15th March last, addressed to Mr. Gladman, together with the report, of same date, of your explorations addressed to me.

2. I have read, with much satisfaction, the interesting details furnished in your report.

3. Under the last paragraph of the general instructions sent you, under date the 14th instant, you will perceive that you are at liberty to make the exploration in the direction of the Manitoba and Winipegoos Lakes, proposed in your report, should you think it desirable, with a view to the general objects of the expedition.

I have the honour to be, Sir,
Your most obedient servant,
(Signed,) T. J. J. LORANGER.

S. J. Dawson, Esq.,
Surveyor in charge Red River Expedition,
Red River Settlement.

TORONTO, 6th February, 1858.

SIR,—I have the honor to submit a final Report on my department of the Canadian Red River Exploring Expedition.

In a letter addressed to your predecessor, the Hon. T. L. Terrill, M.P.P., dated St. Paul, Minnesota Territory, Oct. 28, 1857, I furnished a general scheme of a Report, comprising some topics not mentioned in my instructions.

On returning to Toronto, I waited on the Hon. Mr. Terrill, who, with reference to the general plan of this Report, expressed his concurrence and approval.

The introductory chapter contains an outline of its contents, as well as the general results of what is therein illustrated and expressed in detail.

I have the honor to be, Sir,
Your most obedient servant,
HENRY YOULE HIND, M. A.,
Geologist and Naturalist to the Canadian Red River Exploring Expedition.

To the Honorable T. J. J. Loranger, M.P.P.,
Provincial Secretary.

INTRODUCTION.

The exploration of the route between Fort William, Lake Superior, and Fort Garry, Red River, having been made in canoes, the description of the line of communication between those distant points necessarily refers to the available water facilities which were found to exist, so that in the following sketches of the topography of the country bordering the route, only as much is described as was actually visible from river or lake, when in canoe, or from the summit of hills which were ascended at the different portages and camping places whenever opportunity afforded. At the most, therefore, a very narrow strip of country is comprehended in succeeding delineations, but from the nature of the region through which the strip runs, it is highly probable that it represents the general character of a very large portion of the area between the valleys of Lake Superior and Winipeg, as far as the Lake of the Woods, and the right bank of the Winipeg River.

The speed at which we were obliged to travel, in order to accomplish our voyage within a stated time, very considerably lessened the number of opportunities which might otherwise have been offered for acquiring more ample knowledge of many parts of the country, bidding fair to reward a minute exploration. The distance between Fort William and Fort Garry is about

699 miles, and the time occupied in traversing this great extent of country was thirty-three days, including a stoppage of two days and a half at Fort Francis, one day at Garden Island, and two days at Islington Mission, Winipeg River; so that the time actually spent in canoe was twenty-seven and a half days, which gives an average of 25½ miles a day. This average refers solely to the different canoes I occupied at the several stages of the voyage, which were, in order: a five fathom north canoe, with the main party from Fort William to Fort Francis, a distance of 303 miles; a small canoe, carrying three persons, in company with Mr. Dawson, similarly equipped, from Fort Francis to Islington Mission, 190 miles; and a small canoe, alone, from the Mission to Stone Fort, Red River, a distance of 187 miles. The average daily progress being in the large canoe twenty miles, and in the small canoe forty-seven miles. But the average daily progress of the large canoes along the whole route was twenty-five miles.

The valley of the Kaministiquia, below the Grand Falls, contains an area of good land probably exceeding 20,000 acres. It will doubtless acquire much importance as a terminus of any line of communication, whether by boats or winter road, which may eventually be established between the valleys of Lakes Superior and Winipeg.

From the prevalence of shoal water for a long distance in the Kaministiquia, and the great length of the portages at the height of land, it may not happen that this route will be selected for improvement as a boat communication, but from the considerations which will soon be noticed, Fort William, and the valley in which it is situated, may become under any circumstances points of special interest. Arrow Lake, on the Pigeon River route, formerly pursued by the North-west Company, is within forty, and Gun Flint Lake within sixty miles of Point des Meurons, on the Kaministiquia, as shown on the map.

Between the Grand Falls of the Kaministiquia and Fort Francis, a distance of 273 miles, very few areas of cultivable land occur on the water communication; but it is probable that many areas of limited extent might be found, if sought for, on the shores of the lakes and on the banks of the rivers.

The country, as a whole, must be considered as a sterile waste, offering no inducements for settlement beyond those which a mining interest might foster, or small village stations on a line of communication create.

The valley of Rainy River is by far the most important tract seen, and I do not think that the estimate of 220,000 acres of good land assigned to the British side in this report is too much.

The islands in the Lake of the Woods offer some spots available for cultivation, many of which are now occupied by Indians, who cultivate Indian corn, potatoes, squashes, and pumpkins.

The Winipeg River, until within a few miles of its mouth, flows through a desolate and irreclaimable rocky waste, furnishing a very small supply of timber for lumbering purposes in proportion to its length of 163 miles.

Small patches, varying from 50 to 300 acres of excellent drift clay, occur at and below the Islington Mission; but within a few miles of the mouth of the river an extensive area of good arable land is to be found.

These areas, both large and small, will possess only a local importance; the country through which the Winipeg flows, the character of the river, with its rapids and cascades, having a fall of 333 feet, altogether preclude the hope of its being made available as a permanent means of communication with the valley of Lake Winipeg.

The distance from the North-west corner of the Lake of the Woods to Fort Garry cannot exceed one hundred miles, while, by the Winipeg, the distance from the same point is 282 miles. Whatever may be the result of Mr. Dawson's exploration of the route between those two points, it is very probable that as a station on a winter route the North-west corner of the Lake of the Woods will occupy a very prominent position.

Of the valley of Red River, I find it impossible to speak in any other terms than those which may express astonishment and admiration.

The description which I had read previous to my arrival there, certainly did not in any way prepare me for the magnificent country at present occupied and controlled by those, whose interests, no one seeks to deny, have been opposed to settlement or communication with what may be termed the outer world.

I entirely concur in the brief but expressive description given to me by an English settler on the Assiniboine, at the valley of Red River, including a large portion belonging to its great affluent, is a "paradise of fertility."

During my visit to Assiniboia, a district embracing the settlements on both rivers, I paid particular attention to the objections which have been urged against the climate and soil of the country with reference to agricultural operations, and I have no hesitation in saying that erroneous impressions respecting the available area of cultivable land, the soil, the crops, and the climate still exist, and find publicity.

I do not wish it to be understood that these descriptive errors result from a determination to misrepresent facts, but arise either from unconsciousness of the true nature of existing physical impediments to settlement, or a disposition to explain how those impediments were produced or may be remedied.

I was frequently referred to the Big Swamp as forming an insurmountable barrier to the rearward progress of settlement from Red River. This Big Swamp I found to be maintained by a mill dam at its chief outlet; and while reference was constantly made to the evil, the cause which produced it was ignored or really unknown.

In suggesting to residents at Red River the drainage of the Big Swamp, two objections were urged; the first, that its height above the river would not admit of drainage; the second, that if drained, it would require expensive bridges to be erected over the gullies which would soon be formed by its waters seeking their outlet to Red River.

The first objection was soon answered by my assistant, Mr. John Flemming, who ascertained, instrumentally, the relative heights of Big Swamp, the Prairie, and Red River, at the middle settlement.

He found the elevation of the Swamp to be twenty-seven feet above the river level. Section No. 6 shows those relations; and I may here remark, that as far as my observations enabled me to form an opinion, all other swamps on the Assiniboine, or on Red River, may with equal ease be drained.

The second objection proceeded from a retired factor of the Honorable Hudson's Bay Company, and a member of the Board of Public Works at the settlement.

He admitted the practicability of the measure, but stated that the gullies formed in the yielding clay of the prairie would require expensive bridges to make them passable for settlers, the cost of which might amount to two or three hundred pounds.

I have no doubt that the swamp on the east side of the river would be as easily drained as the one to which I have referred at length.

The origin of these swamps is, I think, simply explained in the following way: Red River occupies a trench which it has cut for itself about thirty feet below the level of the beautiful prairies through which it flows. Its banks are fringed with heavy timber for a depth of perhaps a quarter of a mile or more on one side or the other, and during the lapse of many years, occasional overflows have "silted up" the wooded banks for perhaps a foot above the level of the prairies, so that in some places the river flows for miles between banks which are a little higher than the prairies beyond them. When, therefore, a great flood occurs, as in 1826 and 1852, the prairies are flooded, and the low natural levee, on the immediate bank, prevents the return of the waters to the bed of the river, and forms a swamp.

It is to be well observed that the Big Swamp did not assume its present formidable dimensions until after the flood of 1852; and the construction of the mill dam at Mill Creek now effectually prevents it from drying up, and affording many thousand acres of admirable pasture land to the public grazing grounds of Red River.

I mentioned this impediment to the drainage of the Big Swamp to the owner of the mill, who is one of the most wealthy and influential residents; but he did not think the removal of the dam would assist in draining the swamp—"it was too big."

The summer climate of this region appears to be very well adapted for agricultural operations.

The summer temperature is nearly four degrees warmer than at Toronto, as ascertained by a comparison of corresponding observations.

Indian corn, if properly cultivated, and an early variety selected, may always be relied on.

The melon grows with the utmost luxuriance without any artificial aid, and ripens perfectly before the end of August.

And yet with these natural and most truthful registers of climate, we are accustomed to hear of late spring and early autumn frosts deplored, lamented, and held up as one of the great drawbacks of Red River.

The opinions expressed at the settlement by different individuals on the soil, climate, and natural productions of the country, are often of a very opposite character; and I found invariably that descriptions and opinions were remarkably affected by the relation which the individual bore to the Honorable Hudson's Bay Company.

In making these statements, I do not wish it to be supposed that any attempt was ever made intentionally to mislead, but the habit of decrying everything not connected with the Fur Trade, appeared to have been a second nature to many of the old residents, whose interests are locked up in it.

All kinds of farm produce common in Canada succeed admirably in the District of Assiniboia; these are wheat, oats, barley, Indian corn, hops, flax, hemp, potatoes, root crops, and all kinds of common garden vegetables.

The potatoes, cauliflowers and onions, I have not seen surpassed at any of our Provincial Fairs; an enumeration of the weight of some of these productions of the garden and farm will be found in the text, and numerous specimens accompany this report.

The character of the soil in Assiniboia, within the limits of the ancient lake ridges, cannot be surpassed. It is a rich black mould ten to twenty inches deep, reposing on a lightish coloured alluvial clay about four feet deep, which again rests upon lacustrine or drift clay to the level of the water, in all the rivers and creeks inspected.

I frequently examined the soil some miles distant from the rivers along my line of route, as shown on the map, and I invariably found the prairie portion to exhibit a uniform fertility.

The area occupied by fertile prairies I visited and saw, certainly exceeds 1,500,000 acres; and as will appear from an inspection of the map of Minnesota, the greater portion of the rich and available prairie land in the valley of the Red River lies within British territory, while the valley of the Assiniboine is wholly within it.

The altitude of the valley of the Red River above the sea is about 680 feet, or 320 feet less than the elevation given to it by high authority, and from which erroneous conclusions respecting its climate, in relation to agriculture, have been drawn.

As an agricultural country, I have no hesitation in expressing the strongest conviction that it will one day rank amongst the most distinguished.

The present state of society, and the condition of the people in the settlements, is far from being a pleasing or encouraging subject.

The European and Canadian element have been gradually diminishing for years, and the half-breed population is apparently drawing closer to the habits and tastes of their Indian ancestry.

That agriculture and all the simpler arts have been discouraged, is but too apparent.

The interests of the Fur Trade are necessarily opposed to the centralization and settlement of the half-breed and Indian hunters, and it is everywhere evident that these interests have been upheld at a great sacrifice of means, and by the practice of a far-seeing and skilful policy.

Red River has been settled for forty years, and now contains a population of 7,000 souls, yet no single branch of industry, common even in the thinly settled parts of Canada, is practised there.

Whatever efforts were made in times past, and there have been many, they have terminated in failure, and it is difficult to resist the impression that these failures were designed by some in authority.

Such artifices appear to have been thought necessary when the controlling authorities were weak, and indeed almost powerless, in the face of a strong but irresolute and uneducated people.

The valley of the Red River is capable of supplying all the necessaries of life, with the exception of iron, for some years to come. The most important want is fuel, but there is much probability that on the Upper Assiniboine and the Little Souris River, one of its affluents, tertiary coal, or lignite, will be found in available quantities.

The whole question of a boat communication between Fort William and Red River will be fully discussed in the reports of my colleagues, but having enjoyed the opportunity of seeing the country between Crow Wing, in the State of Minnesota, and the settlements at Red River, open throughout the year, I may perhaps venture to introduce a few remarks with reference to a winter road on British territory.

It is well known that many years since the Honorable Hudson's Bay Company commenced to cut out a winter road between Red River and York Factory, Hudson's Bay, a distance of perhaps 600 miles, with the view to admit of the transport of articles of export during the long winter months. The project, however, was abandoned, but the idea still remains strong in the mind of some of the settlers at Red River.

A winter road from Fort Garry to the Lake of the Woods would not exceed 100 miles; it is a route which is often travelled in the winter, and the cattle at Fort Francis were brought that way. Once on the Lake of the Woods, the road is open for 170 miles, requiring only two or three detours into the forest to escape that portion of Rainy River which never freezes. The other detours from lake or river would necessarily be at the portages, along the line of boat route, or near to them.

The recommendation which a winter road, in conjunction with a summer boat communication, enjoys, is, that the poor or floating population of Red River would easily be induced to settle at the different posts on the route, which would be necessary at stated intervals, with a view to accumulate supplies of provisions, hay, &c., during the summer months. It would be merely transferring their rude industry from the open prairies, where they are often compelled to live in misery during the winter, to a settled village life which might soon become self-supporting, and continually assist in improving the means of communication.

The following tables shew the respective lengths of different routes traversed, or which might be suggested, between Lake Superior and Fort Garry, Red River:

I. The canoe route followed by the expedition from Fort William to Fort Garry	669	miles.
II. Canoe route from Fort William, *via* Mille Lacs, to the north-west corner of the Lake of the Woods	431	“
Road from the north-west corner to Fort Garry	100	“
Total	531	“
III. Road from Point des Meuron, 10 miles from Fort William, to Gun Flint Lake, on the Pigeon River route, air line	58	“
Boat route from Gun Flint Lake to north-west corner of the Lake of the Woods	296	“
Road from north-west corner to Fort Garry	100	“
Total	454	“
IV. Winter road side by side with the last named route	454	“
V. Point des Meurons to Gun Flint Lake, on Pigeon River route	58	“

Boat route *via* the Winipeg to Fort Garry, in the event of a summer road not being at present practicable from Fort Garry to the north-west corner, Lake of the Woods.............	564 miles.
Total.............................	622 "
VI. Route from Fort Garry to St. Paul, Minnesota,	530 "
Air line from Fort William to Fort Garry......	377 "
Difference between air line and route No. III...	77 "

The country between Point des Meurons and Arrow Lake, or Gun Flint Lake, or even Lake Seiganagah, on the Pigeon River route, acquire great interest when viewed in connection with the facilities which already exist at Red River for supplying without delay the material required to establish a boat communication on that route.

The private freighters of the settlement could, and no doubt would, despatch their boats of four or five tons, fully equipped and appointed, to Gun Flint Lake (P. R. R.) or near it, if reasonable remuneration were guaranteed. The only point of present difficulty appears to lie in the communication between Point des Meurons and Gun Flint Lake, or perhaps even Arrow Lake, only 38⅓ miles in an air line from that part of the valley of the Kaministiquia. But little reliable information is accessible concerning this tract of country.

The experience possessed, when assisted by the means at the disposal of the private freighters of Red River, may render their services very valuable auxiliaries in opening a line of communication without much present outlay. Their employment might be regarded as a necessary preliminary step towards establishing a permanent commercial connexion between Canada and the valley of the Red River.

In conclusion, it affords me very great pleasure to have the opportunity of expressing sincere thanks to my assistant, Mr. John Fleming, whose zeal and industry never for a moment flagged from the day of our departure to the present hour.

In addition to the duties to which I referred in my report from Fort Francis, Mr. Fleming levelled across the valley of Red River, from the Big Swamp to the Lake Ridge, while I was engaged on the Assiniboine, and all the views and sketches of forts, cascades, rapids, portages, churches and implements, are from Mr. Fleming's pencil.

The maps, sections, diagrams, and sketches which accompany this Report are as follows:

1st. A topographical map of the whole country traversed, including the Assiniboine and Roseau Rivers, and a plan of Red River Settlement, on a scale of two miles to one inch.

The authorities consulted in the construction of the geographical portion of the map are: for the Pigeon River route, Rainy Lake, and the Lake of the Woods, the map of the Canadian Boundary Commission; for the plan of the settlements on Red River I am indebted to the kindness of Mr. McTavish, the chief officer at Fort Garry. The survey of the settlements was made about ten years since by the Honorable Company's Surveyor. The soundings in Thunder Bay and the outline of the coast, and McKay's mountain range, are from Bayfield's chart.

The route from Fort William to Rainy Lake, Rat Portage to the Stone Fort, part of Red River, the Valley of the Roseau and Rat River, the Assiniboine, the ancient ridges of Lake Winipeg, and the whole of the descriptive outline of the country traversed, made or described in my report from Fort Francis, are the portions for which this report is responsible.

For the elevation and length of each portage, I am indebted to Messrs. Dawson and Napier; but the total rise and fall along the line of route has been made the subject of an independent calculation, as great difference of opinion is known to exist among practical engineers with reference to the allowance which ought to be made in estimating the descent of water by the speed of its current.

2nd. A geological sketch of the whole country traversed within the limits of British territory: Mr. Murray, of the Provincial Geological Survey, is the authority for the Valley of the Kaministiquia; and for the region about Rainy Lake and the

Lake of the Woods, Dr. Bigsby, Geologist to the Canadian Boundary Commission. Scale, 10 miles to 1 inch.

3rd. A map shewing the cultivable areas on the line of route and the approximative limits of the good lands in the valley of Red River, north of the 49th parallel. Scale 10 miles to 1 inch.

4th. A section of the whole route, on the scale of 10 miles to 1 inch.

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" " 2—Coast of Lake Winipeg.
" " 3—Red River at the Stone Fort.
" " 4—Red River near Mr. Guan's house.
" " 5—Red River near St. Paul's Church.
" " 6—Across the Valley of Red River.
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It may be here remarked that the large map shows all the camping places and the localities where we took breakfast and dinner along the whole line of route.

In addition to rock specimens and fossils, I have collected a few insects and reptiles, and fresh water shells; but with reference to botanical specimens, I regret much having to state that a very full collection was rendered worthless by unavoidable exposure to damp in descending the Lower Winipeg, and I regret this the more on account of the interest which several members of the expedition showed in this department of natural history, by kindly availing themselves of many opportunities furnished at the portages and in camp, of adding to the collection.

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(Copy.)

RED RIVER EXPEDITION.

MEMORANDA OF INSTRUCTIONS.

1. The Expedition should be placed under the sole control and management of Mr. Gladman, and Messrs. Dawson and Napier should be instructed that henceforth that gentleman must be considered as the channel through which they will receive instructions, and make their report to the Government.

2. That Mr. Gladman should repair to the Settlement to take charge of the party as early in the Spring as possible.

3. That in accordance with Mr. Gladman's suggestions, Mr. Napier and his party should be withdrawn without delay, and that they should be instructed to return to Toronto as soon as possible, coming back by way of Pembina and St. Paul's. It being, however, understood that Mr. Dawson may retain Mr. DeSalaberry, should he think it necessary to do so.

4. Assuming that the proposed route from Fort Garry to the Lake of the Woods, by Lac Platte, has been sufficiently explored during the winter months by Mr. Dawson and his party, Mr. Dawson's first duty in the Spring will be to explore the route between Rainy Lake and the Lac des Mille Lacs, following the line indicated on Mr. Dawson's map in the "supposed course of the discharge of the Lac des Mille Lacs;" should the route in question be found after exploration to be practicable and desirable, it will be Mr. Dawson's next task to endeavor to ascertain the best means of communication either by land or water from Lac des Mille Lacs to Dog Lake.

5. Should it be found, however, that the proposed communication between Rainy Lake and the Lac des Mille Lacs is impracticable, Mr. Dawson will proceed at once to examine the "Old North West Route" between Lac La Croix and Lake Seiganagah, and will then endeavor to ascertain the best means of communicating between the last named Lake and Fort William.

6. When in possession of the result of Mr. Dawson's explorations, above indicated, between the two routes from Rainy Lake and Lake Superior, &c., the Government will be better enabled to decide between the two routes from Rainy Lake to Lake Superior, viz: that recommended by Mr. Dawson and laid down upon his map, and the "Old North West Route."

The foregoing suggestions are respectfully submitted by the undersigned.

(Signed,) T. J. J. LORANGER,
Secretary.

(Copy.)

SECRETARY'S OFFICE,
Toronto, 30th January, 1858.

SIR,—Adverting to your letter of the 14th inst., I have the honour to transmit to you herewith for your guidance a copy of a memorandum of instructions approved by His Excellency the Governor General in Council, on the subject of the Red River Expedition under your charge.

You will have the goodness to communicate to Messrs. Dawson and Napier a copy of these instructions for the guidance of their future movements.

Mr. C. DeSalaberry, who is about to return to the Expedition party, will take charge of any letters you may desire to send by him.

I am directed to add that should you or Mr. Dawson, or the officer for the time being in charge of the Exploring party deem it desirable, upon further information, to make other explorations than those indicated in the instructions, he shall be at liberty to do so.

I have, &c.

(Signed,) T. J. J. LORANGER,
Secretary.

George Gladman, Esq.,
Rossin House, Toronto.

PORT HOPE,
5th February, 1858.

SIR,—As it has been determined by the Honorable Executive Council, that I should repair to the Red River Settlement to resume charge of the Expedition party there, as early in the spring as possible, I consider it necessary that preparations of men, canoes, and other materials, should be made at Fort William, so that no detention may take place when I shall arrive there.

I therefore propose to send a messenger thither next week, with instructions to my assistant, who is passing the winter at Point Menson, near Fort William.

I shall be happy to receive your instructions relative to Sir George Simpson's letter, and the receipt for £500 which I had the honor to place in your hands.

I have the honor, &c.,
(Signed,) GEO. GLADMAN.

The Hon'ble T. J. J. Loranger,
Provincial Secretary.

(Copy.)

HUDSON'S BAY HOUSE,
Lachine, 26th January, 1858.

MY DEAR SIR,—I have to acknowledge receipt of your letter of 21st inst., covering a draft on the Molson Bank for the sum of $3,289 20c. in payment of accounts against the Canadian Surveying party, employed at Red River, for supplies by the Hudson's Bay Company to the amount of $526 52c., and by Mr. McDermot to the amount of $2,762 68c. I now hand receipts for both sums, that for Mr. McDermot's account being in duplicate, in order that you may be enabled to transmit one to him at Red River. I shall be glad to receive payment of Mr. McDermot's second account as soon as the necessary vouchers may reach you.

I am obliged by your offer to forward any letters I may have for Red River, by the hands of Mr. DeSalaberry, but need not trouble you in that way, having sent my packet by mail a few days ago. I, however, enclose a letter to Mr. McDermot, advising him of the partial payment of his account, which you will perhaps do me the favor to transmit to Red River.

I hand herewith an order on chief factor William Mactavish, at Fort Garry, for the sum of £500 in the Hudson's Bay Company's notes, to be applied to the service of the Canadian Surveying party at Red River. I am authorising the advance of funds as a matter of accommodation contrary to our usual routine, which is to require the deposit of the funds at this establishment before giving an order on Fort Garry.

In order to guard against accident or difficulty hereafter, I should feel obliged by your obtaining for me an acknowledgment of this sum from some member of the Government, so that when the funds are voted by Parliament, there may be no question as to their liability to repay the Company for this advance.

Believe me,
My dear Sir,
Yours very faithfully,
(Signed,) GEO. SIMPSON.

TORONTO, 2nd February, 1858.

Received from the Hon. Hudson's Bay Company, by the hands of Sir George Simpson, an order on William McTavish, Esq., for the sum of five hundred pounds sterling, to be paid to my order, at the Red River Settlement, in the notes of the Company—said amount of five hundred pounds sterling to be repaid to the Company at their office at Lachine by the Government of Canada, out of the appropriation that shall be made by Parliament for account of the "Red River Expedition."

(Signed,) GEORGE GLADMAN.

(Copy.)

SECRETARY'S OFFICE,
Toronto, 23rd February, 1858.

SIR,—His Excellency the Governor General has had before him in Council your letter of the 5th inst., proposing to despatch a messenger to Fort William with instructions to your assistant respecting the preparations necessary with a view to your resuming charge of the Red River Expedition in the coming spring, and also requesting instructions relative to an order for £500 sterling, given to you by Sir George Simpson, payable at Fort Garry in notes of the Hudson's Bay Company, for the accommodation of the Exploring party.

I have to acquaint you in reference thereto that His Excellency has been pleased to authorize you to send a messenger to Fort William as proposed, and also to allow you to avail yourself for the purposes of the Expedition, of the sum of £500 sterling, placed at your disposal by Sir George Simpson, giving that gentleman your receipt for the amount.

I have, &c.,
(Signed,) T. J. J. LORANGER,
Secretary.

(Copy.)

RED RIVER SETTLEMENT,
18th March, 1858.

SIR,—I have the honor to acknowledge the receipt of your letter dated 30th January, Toronto, enclosing me an order signed Mr. McDermot, for the sum of two hundred and fifty pounds currency, and also a copy of instructions from the Provincial Secretary, directing me and my party to return to Toronto *via* Pembina and St. Paul's, with the least possible delay.

In compliance with these instructions, I made preparations to leave this by dog sleds on the 10th inst.; owing, however, to the late heavy rains, and total disappearance of the snow, as well as the unsafe condition of the rivers and Muskeys travelled by the winter route, has been rendered impracticable for the remainder of the season.

I shall therefore be obliged to remain here until such time as the journey to Crow Wing is practicable with horses, which I am told may be about the middle of April, and every arrangement has been made for starting as soon as the state of the roads will permit.

I have, &c.,
(Signed,) W. H. E. Napier.

George Gladman, Esq.,
Toronto.

(Copy.)

Port Hope, Canada West,
24th March, 1858.

Sir,—The question of opening a line of communication between Lake Superior and the Red River, is assuming an aspect of so much greater importance than heretofore, that I trust you will excuse my presuming to offer a few more observations on the subject.

From a careful consideration of the two routes, the one by the Kaministiquia and the other by the old north-west line by Pigeon River, mentioned in my report to the Hon. Provincial Secretary, of the 3rd November last, I am led to the conclusion that the latter must eventually be decided upon as the best, as it possesses the advantage of good navigable waters, less land carriage between the height of land and the Lake of the Woods, and safety in either boat or canoe; in fact it is the best water communication that has hitherto been met with by myself or my Indian guides, during a long experience in various parts of the country.

The difficulties either way are considerable certainly, but not insuperable to Canadian energy and enterprise—on the contrary, I feel confident that this undertaking can be speedily accomplished if proper measures be taken, and the requisite means be applied to it. The first difficulty to be encountered is the formation of a road from the Kaministiquia to the waters flowing towards Lake Winipeg and the Hudson Bay, the length of which would not exceed 60 miles. There would then be a water communication of about 240 miles, requiring some improvement, although the land carriage or "portaging" is less than three miles; and lastly there would be a land road of from 90 to 100 miles, to be made from the Lake of the Woods to Fort Garry, the present capital of Red River.

This last road is so desirable to the inhabitants of Red River, that we may safely rely upon their assistance in its formation. They perceive the advantage it would be to them if they had only 100 miles of cartage distance to the Lake of the Woods, instead of 700 miles to St. Paul's, in the transport of their supplies; besides the earlier period of the year at which their supplies would reach the settlement. The 60 miles of road requiring to be made at the eastern terminus of the line being within Canadian limits, accessible with facility from Lake Superior, and therefore within the reach of our home population, would be constructed before the expiration of the Hudson's Bay Company's lease, in 1859.

My own observations of the north-west shores of Lake Superior, lead me to think that the entrance of the Fort William or Kaministiquia River, presents the most favorable point from which to commence this great link in the chain of our Canadian internal communication. It is accessible in steamers and other lake going vessels, by which any amount of materials and supplies may be forwarded as found requisite. There are, however, very few inhabitants settled on the banks of that river, and looking upon that station as the key to the whole of the British north-west possessions, I feel that I cannot too strongly urge upon the Canadian Government its immediate occupation. This may be effected without any great outlay, or cumbrous machinery; that is to say, by simply employing a surveyor under Government authority, to lay out one or more townships and inviting settlers. During the past four months I have had numerous applications from mechanics and others to join any party that may be sent to those countries next summer ; and I have no doubt whatever, if the system of free grants to actual settlers were adopted, a numerous population would soon be located there.

In the report of the canoe route by Professor Hind, recently published, it is stated that the arable lands in the valley of the Kaministiquia at the Lake Superior terminus (of the line of northern communication) is about 20,000 acres, that is to say, between Fort William and the Kakabeka Falls. Thus we have ample space, and I think it will be obvious to you that a large settlement may be made at Fort William, which cannot fail to be attended with many important advantages to Canada, not only as regards the line of communication which we are now seeking to establish, but also as it will affect Canadian commerce with that vast territory of the north, in years to come.

The lands through which, in the course of our operations, the exploring party has had to pass, being Indian property, the necessity of making some arrangements with the tribes to which they belong becomes immediately apparent, and the Government will, no doubt take this into consideration, in order that measures may be devised to prevent difficulties and collisions.

I have the honor respectfully to remain,
Sir,
Your obedient humble servant,
(Signed,) GEORGE GLADMAN.

To the Honble.
The President of the Council.

(Copy.)

TORONTO, 26th March, 1858.

SIR,—Permit me again to offer a few remarks, relative to the correspondence between the British Colonial Office and Mr. Shepherd, on the affairs of the Hudson's Bay Company.

In Mr. Shepherd's letter to Mr. Labouchere, of 21st January, 1858, he observes, "it is, however, right to notice, that the "territories mentioned as those that may probably be first desired by the Government of Canada, namely, the Saskatchewan and Red River districts, are not only valuable to the "Hudson's Bay Company as stations for carrying on the fur "trade, but that they are also of peculiar value to the Company "as being the only source from which the Company's annual "stock of provisions is drawn, particularly the staple article of "Pemican, a regular supply of which is absolutely necessary "to enable the officers of the Company to transport their goods "to the numerous inland and distant stations, and to feed and "maintain the people, both Europeans and Indians, stationed "thereat. It is proper therefore that I should draw your attention to the fact, that the ultimate loss of those districts would "most probably involve the Hudson's Bay Company in very "serious difficulties, and cause a great increase of expense in "conducting the Trade."

The object of Mr. Shepherd, in the foregoing statement, appears to be to induce a belief that the Company would sustain an immediate pecuniary loss, by the occupation of the Red River and the Saskatchewan districts as a portion of Canada, and under its jurisdiction, and that by reason of the Company being deprived of the power to trade or buy Pemican from the hunters, they would be placed in circumstances of difficulty and expense.

It need scarcely be observed that the object of immigrants into that country, from Europe, Canada, or other places, being settlement and the cultivation of the soil, their farming operations could not materially interfere for some years to come with the providing of the staple article of "Pemican" by the Hudson's Bay Company, upon which so much stress is laid by Mr. Shepherd. If my understanding of the question is correct, the desire of Canada is, the extinction of the monopoly, or exclusive rights of the Company, in every portion of territory under Canadian rule, and the admission of the people of Canada to carry on business operations at Red River, the Saskatchewan, or any other portion of British North America, as freely and as unrestrainedly as they may do in Toronto or Montreal. It is not I presume the desire of Canada to exclude or prevent the Hudson's Bay Company from carrying on their commercial transactions at the Red River or the Saskatchewan, as freely as they now do at Lachine. Equal rights as British subjects and merchants is all that is contended for by Canada, and as Canada does not seek to deprive the Company of any of their establishments or possessions in the Saskatchewan or Red River districts, there is no good reason for supposing that the Company will in any way be debarred from providing as much Pemican as they may think necessary for carrying on their trade as heretofore. It is evident many years must elapse before the cultivable prairie lands will become so occupied by settlers as to interfere materially with the trading of provisions from the hunters at Saskatchewan, and when that time arrives, domesticated animals will take the place of the buffalo.

The question of pecuniary compensation, can, as I conceive, have reference only to the right of soil which the Company claim to possess under their charter or by purchase from the Earl of Selkirk.

The license of exclusive trade with the Indians by the Company being limited to a certain time only, and those territories being reserved to be formed into Colonies by Her Majesty's Government whenever it may be considered proper to do so, I apprehend the rights of the Company will cease as soon as the present lease expires, and other government than that of the Company is established.

Another remark made by Mr. Shepherd is this :—"The Com-
" pany assume that the Government (Canadian) will be respon-
" sible for the preservation of peace, and the maintenance of

"law and order in all the territory ceded to them, and that "they will prevent lawless and dishonest adventurers from infringing, from thence, the rights of the Company over the "remaining portions of their territory."

In these observations, the Hudson's Bay Company assume to treat for the cession of certain territories. As a Trading Company of British Merchants, they assume that the Canadian Government will maintain law and order in the territories ceded to them by the Company, which territories yet, in point of fact, belong to the natives. It may be well here to consider what the present government of the Red River and the Saskatchewan districts really is. So far as the uninitiated know of the matter it is generally understood to be this: A Governor and a Council appointed by the Hudson's Bay Company and holding their meetings at the Company's Forts in the Red River Settlement, form the entire executive administration. The Governor being also the only legal functionary in the settlement, the Company's legal adviser, the Judge, the Directors of the Company (in London) and their representative, the Governor of Rupert's Land (residing for the most part at Lachine) make all the appointments. Hence it devolves chiefly on "the Governor and Council of Assinniboia," as it is in Hudson's Bay form expressed, to preserve the peace, and to maintain law and order in those districts. Can that government, appointed although they be by the Company, and with all the influence of the Company to support them, can they prevent adventurers (I will not call them "lawless and dishonest," for they are chiefly natives seeking to earn an honest livelihood in their own land) from infringing upon the assumed rights of the Company over the other portions of what they are pleased to call Rupert's Land? They cannot, and it would be clearly an impossibility for any Government established by Canada to prevent natives of that country, or in fact any others who might choose to do so, from trading in that extensive territory, wherever they might find it most advantageous to do so. Nor can I suppose that a Canadian Government would for one moment under any circumstances entertain such an idea.

As is well known, the Hudson's Bay Company have for years past held leases from Government of the King's Posts and Seigniories in Lower Canada. Have they been able to prevent intrusion on the Queen's domain and infringements of the rights given by these leases? No! certainly not, and what has been their remedy? Recourse by civil action to the Courts of Canada whenever they were disposed to try the question. And so it will and must be in the districts of Red River, when other laws than those of the Hudson's Bay Company shall have been there established.

Whatever the form of government that may be decided upon, the preservation of peace and the maintenance of law and order will of course be its legitimate objects. There need, however, be no apprehension of any disturbance of the peace, except from the officers or servants of the Company who may take upon themselves to determine (as in the case of Mr. Bannatyne) what is an infringement of the Company's rights, or an intrusion on the Company's undefined boundary line, according to their own ideas. It is, therefore, in my humble opinion, much to be desired, even for the sake of peace and good order, that the whole trade should be free and open to all British subjects.

That it would be requisite, in such case, to place the trade under certain restrictions and enactments (as to the introduction of ardent spirits, for instance) is clear, but that all in the territory, from the Rocky Mountains to the Hudson's Bay, whether servants of the Hudson's Bay Company or not, whether at Red River or on the shores of Hudson's Bay, should be amenable to the jurisdiction of the Red River Government, is equally clear, and a measure of necessity and good policy.

As regards the governing of these territories from or by Canada, the difficulties do not appear greater than they are at the present moment, under the rule of the Company. The gentleman who fills the office of Governor of Assiniboia is a lawyer from Montreal, and it will have been observed by my previous remarks, that the whole machinery of his government consists of a Council acting under instructions from Lachine or from London. If the Company can govern these districts in a mode so simple, there is no question but that the Canadian Government can devise one equally as simple, or one more efficacious and more satisfactory to the mass of the people, especially when the line of intercommunication between Lake Superior and the Red River will be less difficult than it now is. If the lands on the borders of Lake Superior, on the Rainy River, and on Red River, were surveyed and laid out in Townships for settlement, under the authority of the Government, and gradual occupation promoted by the opening out of a practicable road, the appointment of magistrates, and the establishing of a municipal code similar to that of Canada, conferring on the inhabitants the rights of election in their several municipalities, would be all that the state of the country would require for several years to come.

I am confident I speak the sentiments of the Red River people when I say their chief desires are, a voice in their own government, and freedom to trade in the best markets within their reach.

I venture to offer these few remarks, suggested by the local knowledge and experience acquired in the several positions in which I have been placed, and submitting them to your favorable construction as to the motives by which I am actuated.

I have the honor, &c.,

(Signed,) GEORGE GLADMAN.

To the Honourable
The President of the Council.

(Copy.)

Toronto, 9th April, 1858.

SIR,—I have the honor to inform you that, in compliance with your instructions to make immediate arrangements for proceeding to Red River at the opening of the navigation, to convey supplies, men, and canoes to Mr. Dawson, and to continue the exploration of the country west of Red River, I have engaged the services of Mr. James A. Dickenson, C. E., as surveyor, and Mr. John Fleming as his assistant.

In a former communication I referred to Mr. Dickenson's standing as an Engineer and Surveyor, and enumerated the references which he is ready at any time to submit. It will, perhaps, be sufficient here to mention that Mr. Dickenson is an Engineer of ten years standing, a Graduate of Trinity College, Dublin, and that he accompanied the exploring expedition of 1857 to Red River, in the capacity of Chief Assistant to Mr. Napier, winning by his industry, talent, courage, and eminent trustworthiness, the esteem and confidence of all members of the expedition.

Of Mr. John Fleming's excellent capabilities and industry I have already spoken in my Report, dated 7th February, and yesterday Mr. Fleming completed the series of sketches, fifty in number, alluded to in that report, thus closing his connection with the expedition of 1857, and assuming the office of assistant to Mr. Dickenson in the one now in process of organization, under such stipulations as will prove most advantageous to its general interests.

Mr. Gladman informs me that the canoes he brought with him to Sault St. Marie, on his return from Red River, are not in a condition to make the journey from Fort William to Fort Garry. It will therefore be advisable to secure two good north or three bastard canoes, before leaving for Lake Superior, as it would not be judicious to rely upon the probability of obtaining canoes from the Hudson's Bay Company's stores at Fort William.

In order, however, to ensure the good will of the gentlemen in charge of the posts, I beg leave to suggest that a letter should be written for me to take to Sir George Simpson or Mr. Finlayson, at Lachine, requesting either of those gentlemen to favour me with a document addressed to the gentlemen in charge of the posts I may visit, containing instructions to offer every facility in the prosecution of the exploration.

I have the honor to be, Sir,
Your obedient servant,
(Signed,) Henry Y. Hind.

The Hon. T. J. J. Loranger,
Provincial Secretary.

(Copy.)

SECRETARY'S OFFICE,
Toronto, 14th April, 1858.

SIR,—I am commanded by His Excellency the Governor General, to state to you for the information of the Honorable Hudson's Bay Company, that it is the intention of the Canadian Government to send another expedition this year, into the country in the neighbourhood of the Red River Settlement, for the purposes of exploration.

2. The expedition will be divided into two parties, of which one will be under the direction of Professor Hind, and the other under that of Mr. Dawson. Both of these gentlemen served with the expedition last year, and the latter is still at Red River.

3. The operations of Mr. Dawson and his party, probably about twenty men, will be confined pretty much to the same ground as last year, namely, the route from Fort William to Fort Garry; while the operations of Professor Hind and his staff, will extend to the country west of Red River and Lake Winipeg, and below the Rivers Assiniboine and Saskatchawan, as far west as "South Branch House."

4. His Excellency desires to bespeak through you for the expedition this year, the same courteous assistance for the officers and servants of the Company on the line of the proposed expedition, which was so readily proffered last year, and which was (His Excellency is informed) so freely extended to all the members of the expedition.

5. This letter will be delivered to you by Professor Hind, who is about to repair to Montreal on business connected with the expedition.

6. Professor Hind would be glad to be favored by you with a general letter, addressed to the officer in charge of the Company's posts, on the route about to be visited by him, requesting them to promote, as far as in their power, the general objects of the expedition under his charge. His Excellency desires me to state that he trusts it will be in your power to gratify

Mr. Hind's wishes in this matter, as he doubts not it would very materially advance the object of the expedition.

I have the honour to be, Sir,
Your obedient servant,
(Signed,) T. J. J. Loranger,
Secretary.

Sir George Simpson,
Governor Hudson's Bay Company,
Hudson's Bay House,
Lachine, Montreal.

(Copy.)

Hudson's Bay House,
Lachine, 23rd April, 1858.

Sir,—I have the honour to acknowledge your communication, dated 14th instant, informing me by command of His Excellency the Governor General, of the intention of the Canadian Government to send another expedition this year to the neighbourhood of the Red River Settlement, for the purposes of exploration, and requesting for the expedition the same assistance from the Hudson's Bay Company, as was rendered to its members last season.

In reply, I beg to state that your letter was delivered to me in person by Professor Hind, to whom I intimated verbally, that it afforded the Hudson's Bay Company, at all times, great pleasure to render good offices to the Government of Canada, and that such assistance as could be given at the Company's posts to the expedition under his command, would be freely rendered.

I have already furnished Professor Hind with the letters of inintroduction to the Hudson's Bay Company's officers, which you apply for, and given him the necessary authority to obtain canoes, and other supplies at Sault St. Marie and Fort William. The usual equipment of tent and other camp appointments for his use while travelling in the interior, has been provided from the Company's store.

Begging you will assure His Excellency the Governor General that the Hudson's Bay Gompany will forward the objects of the exploring expedition with the same cordiality with which they are ever anxious to co-operate with the Government of this Province,

I have the honour to be, Sir,
Your obedient servant,
(Signed,) G. SIMPSON.

The Honorable T. J. J. Loranger,
Provincial Secretary,
Toronto.

(Copy.)

SECRETARY'S OFFICE,
Toronto, 27th April, 1858.

SIR,—I have had the honour to receive, and lay before His Excellency the Governor General, your letter of the 23rd instant, in reply to mine of the 14th instant, and am directed by His Excellency to thank you for your acts of courtesy to Mr. Hind, and for the promises of the co-operation of the Hudson's Bay Company, in pomoting the object of the expedition, during the present year, to the neighbourhood of the Red River Settlement.

I have the honour to be, Sir,
Your obedient servant,
(Signed,) T. J. J. LORANGER.

Sir George Simpson,
Governor Hudson's Bay Co.,
Hudson's Bay House,
Lachine, Montreal.

(Copy.)

SECRETARY'S OFFICE,
Toronto, 14th April, 1858.

SIR,—In my conversation with you last week I intimated to you that His Excellency the Governor General in Council deemed it advisable, with a view to reduce as much as possible the expenditure of the Red River Exploration party for the current year, to dispense with your services as general conductor of the expedition.

2. I have now to notify you, formally, that your official connexion with the expedition will terminate on the 22nd inst.

3. His Excellency has further been pleased to dispense with the services of all those individuals connected with the exploring party who were under your more immediate control, and whom Mr. Dawson may not require, and specially direct to remain with him.

4. You will lose no time in notifying these gentlemen accordingly.

5. I have further to inform you that Professor Hind, who is about in a few days to leave for Red River, has been directed to take possession of the canoes and other articles, as well as any provisions belonging to the Government, either at Collingwood or Sault St. Marie. You will therefore give any directions that may be necessary for the transfer of the things above mentioned to Mr. Hind.

6. You will also furnish me with a complete inventory of any other Government property connected with the expedition, showing where and in whose custody it is.

7. It is of course desirable that all accounts connected with the expedition, while under your management, should be closed and audited as speedily as possible.

I have the honor to be, sir,
Your obedient servant,
(Signed) T. J. J. LORANGER.

George Gladman, Esq.,
Port Hope.

(Copy.)

SECRETARY'S OFFICE,
Toronto, 14th April, 1858.

SIR,—During the last week I communicated to you, verbally, instructions in reference to the proposed expedition to the neighborhood of the Red River during the present year.

2. It has been acceded, as you are aware, with a view to keep down as much as possible the expense of the expenditure this year, to dispense with the services of Mr. Gladman as its general manager.

3. The exploration party this year will consist of two divisions, one to be placed under your direction and control, and the other under the direction of Mr. Dawson.

4. His Excellency in Council has been pleased to place under your charge the Topographical and Geological portion of the exploration, respecting which full instructions will be given in another letter, while Mr. Dawson will continue to perform the same duties as last year, viz., those of Surveyor, &c.

5. The estimate of the probable expenditure of the expedition, submitted by you on the 6th inst., was laid before His Excellency in Council, and has been approved of by them, and I have accordingly now to direct you to be guided as much as possible by that estimate in engaging your assistants, hiring your men, as well as in the other necessary expenditures of the expedition.

6. It is hardly necessary to say that His Excellency relies upon your exercising a due economy in all matters connected with the expedition.

7. As soon as you have completed your contemplated party, you will furnish me with a schedule, giving the names of all the persons composing it, and stating their rates of pay, and the dates from which their pay is to commence. Such a schedule will be necessary to supply the Auditor with the means of auditing your accounts.

8. Having organized your party, you will lose no time in repairing with them to Red River, taking with you the supplies (referred to in the estimate) required for Mr. Dawson.

9. On your way to the Red River, you will take possession of the canoes, provisions, and other articles belonging to the Government, either at Collingwood or Sault St. Marie. These, with the men intended for Mr. Dawson, you will deliver over to that gentleman when you meet him, either at Red River or on his way back.

10. You are to consider all the articles and materials of any description belonging to the Canadian Government, connected with the late expedition, as available for the purposes of the present expedition, and you and Mr. Dawson may therefore divide them between you in whatever way you may think most advantageous. Such articles, if any, as may not be required by either of you, should be left in the custody of some trustworthy person to await the orders of the Government.

11. As soon as you shall have put Mr. Dawson in possession of the men and canoes intended for him, each of you will be held separately responsible for the expenses of his own party. You will therefore be careful to keep an accurate account of your expenditure.

12. The Auditor General of Public Accounts will give you any information you may require as to the most convenient mode of making out and furnishing your accounts, &c.

ESTIMATE of the cost of the Red River Expedition, for the year 1858.

	MR. DAWSON. Returning. $	MR. HIND. Going. $
1. Two North Canoes with 12 Caughnawaga Indians, and 2 French Canadians, at $1 per day—half the expense to be charged to each Expedition, as it serves the object of both equally, for a period of 2 months	420 00	420 00
12 men for 6 months for Mr. Dawson	2160 00	
Provisions for Mr. Dawson	760 00	
Provisions for Mr. Hind		760 00
Instruments for Mr. Hind—		
Levels, Chains, Thermometors, Compasses, &c		260 00
Photographic apparatus complete		200 00
Water-proof boxes		30 00
Stationery		30 00
Medicine Chest		20 00
Presents for Indians at the Lake of the Woods—half to be charged to each party—		
Presents, consisting of Tea, Tobacco, Hooks, &c	50 00	50 00
Salaries—Mr. Dawson, at $6 per diem—7 months	1260 00	
" —Mr. Hind, do. do. —8 do.		1440 00
Surveyor to Mr. Hind's party, at $4 per diem—8 months		960 00
Assistant to Surveyor, at £20 per month—8 months		640 00
Photographer to Mr. Hind's party		640 00
First Assistant to Mr. Dawson	960 00	
2nd and 3rd do. do.	630 00	
Returning expenses of Mr. Dawson's party from Superior City to Toronto, by Steamer and Rail	400 00	
Further expenses of Mr. Hind's party in exploring the region about Manitobah, and in transacting business at Red River:—		
7 Horses		420 00
3 Carts, with hire of men, (8 men)		364 00
Feed for entire party, at 30 cents per day, for 90 days		324 00
Return by Winter route *via* Lake of the Woods and Fort William		700 00
Camp equipage, Ammunition, &c		400 00
		7658 00
Deduct sale of 7 Horses at a loss of 20 per cent		336 00
		7322 00
Total Expense of Mr. Dawson's party, for 1858, after leaving Red River	6640 00	
Total expense of Mr. Hind's party, going to Red River, Exploring and returning		7322 00
Total combined Expenses	$13,962, or	£3491 C'y.

Expense of the Exploration of the Assiniboine and Souris Rivers for Tertiary Coal, and of Lake Manitobah for salt, and of the country between Lake Winipeg and Lake Manitobah, and the country between Winnipagoose Lake and the Assiniboine, and Westerly to the Saskatchewan, as far as the season will permit, between Lake Winipeg and Lake Manitobah, in excess of the expense of sending supplies to Mr. Dawson, $1872,—say $2000 or £500 currency.

(Signed) H. Y. HIND.

N.B.—Estimate referred to in paragraph 5 of Provincial Secretary's letter to Mr. Hind, dated 14th April, 1858.

SCHEDULE (A.)

List of persons employed in the Canadian Red River Expedition for 1858, and the Salaries or Wages of each, in conformity with an estimate dated April 6th, 1858.

Date of Engagement.		Salary, per diem.	
April 14th.	Henry Y. Hind, Geologist. (In charge.)........	$6	00
" "	James A. Dickenson, Surveyor................	4	00
		per month.	
" "	John Fleming. Assistant Surveyor.............	£20	0
" "	John Hime, Photographer....................	20	0
	INDIANS.		
April 26th.	1. Charles S. Kanasali, Guide	$30	00
" "	2. Martin Takatsitsiensere, Bowman............	27	50
" "	3. Louis Tekaseiaseir, Steersman..............	27	50
" "	4. Ignaa Tekarustiorite.......................	22	50
" "	5. Sx. Tiorateken............................	22	50
" "	6. Lazare Anerateriku	22	50
" "	7. Mathias Shatckareukes....................	22	50
" "	8. Thomas Orité, Steersman...................	27	50
" "	9. Louis Alioksisaks	22	50
" "	10. Thomas Shakaohetstha.....................	22	50
" "	11. Mathias Aseurathor	22	50
" "	12. Ignau Taserarew..........................	22	50
" "	13. Thomas Tekarenhoute	22	50
" "	14. Pierre Arontuakerna.......................	22	50

(Signed,) H. Y. Hind.

N. B.—Schedule furnished by Mr. Hind, as called for in paragraph 7 of Provincial Secretary's letter, dated 14th April, 1858.

13. On your return from Montreal I shall be prepared to give you your instructions in reference to the localities in which your explorations are to be conducted, and as to the objects to which your attention is to be more especially directed.

I have the honor to be, Sir,
Your obedient servant,
(Signed,) T. J. J. Loranger,
Secretary.

To H. Y. Hind, Esq.,
Toronto.

SECRETARY'S OFFICE,
Toronto, 16th April, 1858.

SIR,—I have the honor to inform you that His Excellency the Governor General has recently had under his consideration in Council, the subject of the organization for the present year of the Exploring Expedition in the neighborhood of the Red River Settlement.

2. His Excellency in Council has decided, with a view to keep down as much as possible the expense of the expedition this year, to dispense with the services of Mr. Gladman as its general manager.

3. The Exploration party will consist of two distinct divisions, of which one division will be placed under your direction and control, and the other under the direction, &c., of Professor Hind.

4. Professor Hind is now engaged in making the necessary preparations for his departure for the Red River, and will probably set out from this in about ten days.

5. Professor Hind has been instructed to take with him the men (14), canoes, and other supplies, which you require for the prosecution of your explorations, and to hand them over to you when you meet.

6. You are to consider all the articles and materials of every description belonging to the Canadian Government connected with the expedition as available for the purposes of the expedition this year, and you and Professor Hind may therefore divide them between you in whatever way you may think most advantageous. Such articles, if any, as may not be required by either of you should be left in the custody of some trustworthy person to await the orders of the Government.

7. As soon as Professor Hind shall have handed over to you the men and canoes, &c., intended for you, each of you will be held separately responsible for the expenses of his own party.

8. It would facilitate the auditing of the accounts of the expedition for the future, if you would furnish me with a complete list of your party as soon as you receive the men to be

furnished you by Professor Hind, with their several rates of pay, and other details.

9. I am to add that should you consider it advisable, you are at liberty to detain with you any of the individuals on either Mr. Gladman's or Mr. Napier's staff.

10. All your reports should in future be made direct to the Government through this office.

11. The instructions as to your future movements will be embodied in a separate communication.

I have the honor to be, Sir,
Your obedient servant,
(Signed,) T. J. J. Loranger,
Secretary.

S. J. Dawson, Esq.,
Surveyor, Canadian Red River Expedition,
Red River Settlement.

(Copy.)

Secretary's Office,
Toronto, 16th April, 1858.

Sir,—Adverting to the last paragraph in my letter to you this day, I have the honor to inform you that it is not thought necessary to make any alteration in the instructions for your future operations contained in the Order in Council of the 29th January last, and which have been communicated to you by Mr. Gladman.

2. You will therefore consider those instructions, so far as your explorations, &c., are concerned, still in force.

3. I am to add, however, that if time allows it, you will endeavor to survey the road between Gun Flint Lake and Pointe de Meuron, and when returning from the north-west corner of the Lake of the Woods, and passing through Rainy Lake, make occasional traverses, when practicable, with a view to ascertain the extent of arable land in that locality.

4. I am further to state that His Excellency, having every confidence in your judgment, does not think it right to trammel your movements by detailed instructions, and that you are therefore at liberty to make any other explorations in addition to those particularly mentioned in the instructions already conveyed to you, should you, upon the information obtained in the locality, deem it desirable you should do so.

I have the honor to be, sir,
Your obedient servant,
Signed, T. J. J. LORANGER,
Secretary.

S. J. Dawson, Esq.,
Surveyor in command of the
Red River Expedition, Red River Settlement.

(Copy.)

PORT HOPE,
15th April, 1858.

SIR,—I have the honor to acknowledge the receipt, this morning, of your letter of yesterday's date, conveying to me formally the intimation that His Excellency the Governor General in Council deemed it advisable, with a view to reduce as much as possible the expenditure of the Red River exploration party for the current year, to dispense with my services as general conductor of the expedition, and that my official connection with the expedition will terminate on the 22nd instant.

Also, that His Excellency has further been pleased to dispense with the services of all those individuals connected with the exploring party, who were under my more immediate control.

An opportunity being presented by a steamer going from Detroit to Superior City, and acting on your conversation with me on *the 12th instant*, I immediately wrote to my son and assistant (Henry Gladman), now at Fort William, directing him to cease all operations on his part in connection with the explorations he was instructed to make between the Kaministiquia and Pigeon rivers, and to return to Toronto.

He is the only officer of the exploring party who can be said to have been under *my immediate control.*

By the memorandum of instructions which you were pleased to hand me on the 30th January, Mr. Dawson was directed to report, through me, to the Government, on the proceedings of the expedition, in his department as surveyor.

I beg to acquaint you that I have not received any report whatever from Mr. Dawson, therefore have no knowledge of his present position. His assistants, nominated and appointed by the Government at the outset of the expedition, continue *under his control*, as far as I know.

On the 13th instant I placed in the hands of Professor Hind the receipt given by Mr. Spalding for the two canoes and the paddles left by me at the Sault St. Marie, in October last, with an order for their delivery to him.

My son is further directed to take an inventory of all stores belonging to the Government, and to transfer to Mr. Hind whatever he may require.

On the 13th instant (in conformity with your personal instructions) I handed to the Auditor General all the accounts of the expedition, amongst those documents will be found lists of the instruments, &c., furnished to Professor Hind, Mr. Dawson, and Mr. Napier, in whose custody they always have been.

Having left my son alone at Fort William, with natives only to assist and guide him in his explorations through the country, without money and with an exceedingly scanty stock of provisions, he must have been under the necessity of borrowing supplies from the Hudson's Bay Company, or from the French residents, both for his own subsistence and the payment of the natives employed. These supplies will of course *have to be repaid.* The quantity of supplies I have ordered to be sent forward to Superior City will amount to about £70 only; I would therefore beg to suggest that Mr. Hind should by no means depend upon obtaining any portion of those supplies, but provide himself entirely from Toronto or from Detroit, as may be found most convenient.

I have the honor to remain, sir,
Your obedient humble servant,
(Signed,) George Gladman.

(Copy.) Secretary's Office,
Toronto, 27th April, 1858.

Sir,—I have the honor to communicate to you the instructions promised in the last paragraph of my letter to you of the 14th instant, for your guidance in connection with the branch of the expedition to the west of Red River, which has been committed to your charge.

2. The instructions contained in that letter will suffice for your guidance up to the time of your arrival at the Red River settlement, and the present instructions therefore have reference merely to your operations after having left that settlement.

3. The region of country to which your explorations are to be then directed is that lying to the west of Lake Winipeg and Red River, and embraced (or nearly so) between the rivers Saskatchewan and Assiniboine, as far west as "South Branch House," on the former river, which latter place will be the most westerly point of your exploration.

4. It will be your endeavor to procure all the information in your power respecting the geology, natural history, topography and meteorology of the region above indicated.

5. As to the general character of the geological portion of your labors, it is unnecessary to add anything to the instructions communicated to you last year, and which, so far as this point is concerned, will serve for your guidance for the present season.

6. There are, however, two matters to which I am to request you to direct your particular attention, namely, the salt region in the neighborhood of Lake Manitoba, adverted to in your

report for last year, and the deposit of tertiary coal or lignite, reported to exist in the valley of Mouse River.

7. It is most important that you should ascertain, by actual examination, as far as possible, the existence, extent and character of these deposits.

8. In ascending or descending the different rivers you may have occasion to explore, it is advisable that you should note with care, their breadth, depth, rate of current, and the probable quantity of water discharged by them at different points, and at different seasons of the year, their facilities for navigation by boats or steamers, and whether they overflow their banks to any great extent at any season of the year.

9. The general aspect of the whole regions should be carefully described. The character of the timber and soil observed, and the general fitness of the latter for agricultural purposes ascertained as far as may be from observation and inquiry.

10. It is desirable that your meteorological observations should be made with the maximum and minimum thermometer, and with the wet and dry bulb. The temperature of the rivers, lakes and springs should also be recorded, and the rain fall observed.

Any reliable information you can obtain as to the quantity of snow precipitated during the winter would also be of interest.

11. Your topographical explorations should be made with reference to the construction of a map (as complete as possible) of the region explored, on a scale of two miles to one inch—and your operations should be conducted in view of a possible extension, at some future time, of the exploration, so as to embrace the entire valley of Lake Winipeg and its feeders.

12. With a view to illustrate the natural history of the country, you will avail yourself of such opportunities as may present themselves to collect any objects that may be useful for that purpose.

13. Any geological or natural history specimens which you may have collected during your explorations, may be left by you at Red River, on your return, with the other property of

the Government belonging to the expedition, to await the orders of the Government, with the other articles referred to in the tenth paragraph of my letter of the 14th inst.

14. I am to add that His Excellency, having every confidence in your judgment and discretion, does not wish to trammel you with more detailed instructions, and that you are left at liberty to make any other exploration, in addition to those particularly named therein, should you, upon information obtained in the locality, deem it desirable for the general purposes of the expeditlon.

15. It is hardly necessary to state that you will be held responsible for the conduct, diligence, and fidelity of the party under your charge.

16. With a view to distinguish your branch of the expedition for the present year, it will be convenient to designate it as the "Assiniboine and Saskatchewan Exploring Expedition;" by this title therefore you will describe it in your Report.

I have the honor to be, sir,
Your obedient servant,
(Signed,) T. J. J. Loranger,
Secretary.

Henry Y. Hind, Esq.,
Toronto.

[Copy.]

Toronto, 23rd April, 1858.

Sir,--I respectfully ask permission to endeavour to make arrangements with Dr. McKay, the Editor-in-chief of the Illustrated London News, and now in this city, to have published in the Illustrated London News, a series of sketches of the Forts belonging to the Hudson's Bay Company, of Indians and of scenery, either drawn by hand or taken by photograph, during the proposed exploration of the vallies of the Assiniboine and Saskatchewan, under my charge.

I would suggest that each sketch or photograph should be accompanied by a brief description furnished by myself, and in all instances sent to Toronto for your inspection and approval before transmission to London.

I would further beg to suggest that it should be made if possible, a condition of the arrangement that stereotyped copies of all sketches or photographs taken during this exploration and published in the Illustrated London News, be supplied by the Proprietor of that journal for the purpose of illustrating my report and narrative of the progress of the expedition.

I have, &c.,
(Signed,) H. Y. Hind.

To the Honble.
T. J. J. Loranger,
Provincial Secretary.

Secretary's Office,
Toronto, 27th April, 1858.

Sir,—I have the honor to inform you that His Excellency the Governor General has been pleased to approve of the arrangement which in your letter of the 23rd inst. you state you desire to be permitted to make with Mr. McKay, the Editor of the Illustrated News, relative to the publication in that journal, from time to time, of sketches to illustrate the scenery &c., of the country which you are about to explore this season.

It is understood of course that no charge will be made for the publication of the sketches, &c., in the Illustrated News.

His Excellency agrees with you in thinking that it would be very desirable to secure, if possible, from the proprietors of the News, stereotyped copies of any sketches furnished by you and published by them, for the purpose of illustrating your report.

I have, &c.,
(Signed,) T. J. J. Loranger,
Secretary.

PART I.

THE CANOE ROUTE FROM FORT WILLIAM, LAKE SUPERIOR, TO THE MOUTH OF RED RIVER, LAKE WINIPEG.

CHAPTER I.

The Sault Ste. Marie Canal, 1 — Profile of the Route between the Ocean and Lake Superior, 2 — Canadian public works on this Route, 3 — Elevation of Lake Superior above the Ocean, 4 — Elevation 600 feet, 5, 6 — Nature of the Barrier opposing further progress, 7 — Superior City distant from the Mississippi only 45 miles, 8 — Route by Superior City important, 9 — Distance between dividing ridges, 10 — Route from Valley of Lake Superior to that of Rainy Lake in Canadian territory, 11 — Pigeon River Route, 13 — The Grand Portage, 14 — 2nd Portage to 12th Portage, 15, 18 — Belle Portage leads over the height of land, 18 — Advantages of the Pigeon River Route, 19 — Current River, 20 — Character of the winter route of Indians to Great Dog Lake, 24 — A Road would save many miles of canoe route, 25 — Height of Dog Lake and length of Portage, 26 — Importance of Current River Route, 27 — The Neepigon Route, 28 — The Outlet, 29 — The termination in the Winipeg River, 30.

Sault Ste. Marie Canal completes the communication between the Ocean and Lake Superior.

1. The completion of the Sault Ste. Marie Canal, (1) in May, 1855, established an uninterrupted water communication for sea-going vessels between Lake Superior and the Ocean.

Profile of the Route between the Ocean and Lake Superior.

2. The heights and distances enumerated in the subjoined table, shew a profile of this route between Anticosti, in the Gulf of St. Lawrence, and Fort William, at the mouth of the Kaministiquia River, Lake Superior, (2).

(1.) The Sault Ste. Marie Canal is one mile and-an-eighth in length, 70 feet wide at bottom, and 100 at water-line, depth 12 feet. The average lift of the locks is 17 feet 6 inches.

(2.) See a Map of the Province of Canada, shewing the connection by steam navigation of the region of the great lakes with Europe, by the route of the St. Lawrence and the great lakes, prepared for the Canadian Commissioners of the Paris Exhibition by Thomas Keefer, C. E., Montreal, 1855.

NAMES.	Distance from Anticosti in miles.	Elevation above the Sea level.	Number of Locks.	Length of Locks in feet.	Breadth of Locks in feet.	Total Lockage in feet.
Anticosti	....	....	....	....	....	....
Quebec	410	....	....	....	....	....
Montreal	590	14	....	....	....	....
Lachine Canal	590	14-58	5	200	45	44¾
Beauharnois do	614	58'5-141'3	9	200	45	82½
Cornwall do	662½	142'6-185'6	7	200	45	48
Farren's Point do	678	190'5-196	1	200	45	4
Rapid Plat do	688	195'3-207	2	....	....	12
St. Iroquois Canal	699½	207-213	1	....	....	6
Galops do	714½	213-225	2	....	....	8
Lake Ontario	766	234	....	....	....	....
Welland Canal	1016	234-564	27	150	26½	330
Lake Erie	1041	564	....	....	....	....
Detroit River	1280	564	....	....	....	....
Lake St. Clair	....	....	....	....	....	....
River St. Clair	....	....	....	....	....	....
Lake Huron	1355	573	....	....	....	....
River Ste. Marie	1580	573-582'5	....	....	....	....
Sault Ste. Marie Canal	1650	582'5-600	2	550	75	17½
Lake Superior	1650	600	....	....	....	....
Fort William	1910	....	....	....	....	....
Superior City	2030	....	....	....	....	....

Great Public Works of this communication altogether Canadian, with the exception of the Sault. Ste. Marie Canal.

3. With the single exception of the Sault Ste. Marie Canal, all the great Public Works which have been contrived and executed for the purpose of reducing the obstacles to uninterrupted navigation between the great lakes and the ocean, lie within Canadian territory, and are under the control of the Canadian Government. (1.)

Elevation of Lake Superior above the level of the Ocean, according to Bayfield, Messrs. Foster and Whitney, Sir Wm. Logan, and Sir Jno. Richardson.

4. The elevation of Lake Superior above the ocean level has been variously estimated by different observers. Captain Bayfield considered it to be 627 feet above the level of the sea, which altitude is adopted by the narrators of Agassiz tour in that region ; and by Messrs Foster and Whitney, in their

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(1) The cost of the construction of these remarkable links in the chain of unbroken communication, which now penetrates a distance exceeding 2000 miles into the interior of the North American Continent, approaches $15,000,000, and the annual revenue has risen from §131,000, in 1850, to $357,896 in 1856.

report on the geology of the Lake Superior Land District; Sir William Logan, in his Geological Report for 1846-7, states that its surface is 597 feet above the ocean; and in Professor Hall's Geology of the 4th District, N. Y., 596 feet is its assigned elevation. Sir John Richardson assumed its level to be 641 feet above the ocean.

Mr. Keefer finds the level to be 600 feet above the ocean.

5. The altitude deduced in 1855 by Mr. Keefer, for the Map prepared for the Canadian Commissioners at the Paris Exhibition, with the advantages and information derived from the levels obtained in the construction of various railways and canals from the ocean to Lake Superior, establised a difference of only of 3 feet in excess of that obtained by Sir William Logan in 1847.

6. The occasional fluctuations in the level of the waters of Lake Superior certainly exceed 3 feet, so that the elevation in the foregoing table of 600 feet, is probably a correct estimate of the mean height of the waters of this Kitchi-gum-mi, (2) or "Great Lake" of the Ojibways above the ocean.

Nature of the barriers opposing further progress.

7. The barrier which opposes further westward progress by steam or boat navigation, follows the general direction of the north-western and western coast of Lake Superior. Near Fond du Lac, in the territory of the United States, the dividing ridge is distant from the St. Louis River about 18 miles, in a southerly direction, and here the elevation of the ridge is 475 feet above the waters of the Lake.

Superior City distant from the navigable portion of the Mississippi, above Crow Wing, only 49 miles.

8. Kettle river, flowing into the St. Croix, a tributary of the Mississippi, issues from a small lake not twenty miles from Lake Superior, and the distance of the navigable portion of the Mississippi, adjoining Sandy Lake, is scarcely 45 miles from Fond du Lac. The Mississippi is said to be navigable for steamers of light draught from Crow Wing to beyond this

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(2) Spelt by Longfellow Gitche-Gumee, Big Sea Water, (Hiawatha:)

point, and Crow Wing is 130 miles from St. Paul by the travelled road, and less than 120 miles in an air line from Superior City.

The route by Superior City to Crow Wing, a line of future commercial importance.

9. The construction of a plank road between Superior City and Crow Wing, is already in contemplation, and the route is even now occasionally travelled. This line of communication between the valley of the Mississippi and the great lakes, will no doubt become of great commercial importance, to the region of the Upper Mississippi and its numerous tributaries ; and it is not improbable that its influence may extend to other watersheds, viz : those of Rainy Lake, Red River, and the Saskatchawan.

Distance between dividing ridges of Lake Superior and Rainy Lake.

10. The dividing ridge between the Embanas River, a tributary of the St. Louis River, and Vermillion River, which flows into the valley of Rainy Lake, is about forty-eight miles in an air line from the north-west coast of Lake Superior. On the Pigeon River, which forms the boundary between the United States and Canada, the dividing ridge is only 28 miles in an air line from the north-west coast of the same great water level, but by the course of Pigeon River this height of land, or Ash-a-soi-si-ta-gon Lake, is more than double that distance.

Routes from Valley of Lake Superior to that of Rainy Lake, in Canadian territory.

11. In Canadian territory there are several routes by which access is gained from the valley of Lake Superior to that of Rainy Lake. The most southerly of these is the old North-west Company's frontier route by Pigeon River, already referred to ; the second by the Kaministiquia River, which forms the main subject of the first section of this Report. The third an Indian route by Current River to Great Dog Lake ; and the fourth an Indian route by the Neepigon to Winipeg Rivers.

12. A brief notice of the Pigeon River route, with a glance at the Current River and Neepigon River routes, may not be out of place before proceeding to describe in detail the topography of the Kaministiquia route.

SKETCH OF THE PIGEON RIVER ROUTE, TO THE HEIGHT OF LAND SHEWN ON THE CHART.

(*See accompanying Chart.*)

Pigeon River Route.

Cascades numerous, Timber of the Country, Poplar, Spruce and Birch.

13. (1) Pigeon River debouches into Lake Superior about 150 miles in a north-easterly direction from Fond du Lac, or Superior City, in an air line, but little over 30 miles from Fort William, and 15 miles from the south-west corner of Ile Royale. The first falls occur 1½ miles from the mouth of the stream, and the river is here 75 feet broad, the perpendicular descent is 60 feet. Below the Falls, the river runs through a deep gorge from 15 to 20 feet in width; about one mile further up a small fall occurs, and a mile and a half beyond, a perpendicular fall of 19 feet is caused by a dyke of greenstone, bearing east and west. Above this fall is a rapid which extends 11 feet in forty yards; it rushes between hills on either side of the river, three and four hundred feet in height. Between the mouth of Arrow River, and the Great Cascades, the river presents a succession of rapids, and small falls, the country is rolling and covered with poplar spruce and birch.

The Grand Portage 9 miles long.

14. The Great Cascades are one mile below the West end of Grand Portage, once the site of "Fort Charlotte," for many years the most important post of the North West Fur Company: In the distance of 400 yards, the River falls 144 feet: Three quarters of a mile beyond the Great Cascades, several rapids occur, and the river flows between Slate Hills, until the West end of the Grand Portage is gained: To avoid all these obstructions, the Grand Portage of about 8¼ miles is made from Grand Portage Bay, on Lake Superior, to this point of the river.

2nd, 3rd, and 4th portages.

15. Calling the Grand Portage the first portage on this route, which it really becomes, if instead of ascending the river, transshipment is made directly from Grand Portage Bay on Lake

Superior; the second transhipment will be round three perpendicular cascades, having, with the accompanying rapids, an aggregate fall of 55 feet: The third portage is 630 paces long: The fourth portage is 750 paces long, and avoids a rapid.

5th, 6th, 7th, 8th and 9th portages.

16. The fifth portage is 2,200 paces long, and terminates at the lower end of Lac du Coq, or Fowl Lake: The sixth portage is 550 paces long, and leads to Moose Lake:—At the upper end of Moose Lake a portage, marked on Thompson's map as 2.24 miles or 4505 yards long, leads to Arrow River:—The seventh portage (Great Cherry Carrying Place) is 1035 paces long, and leads to Lower Lilly Lake: The ninth portage Lesser Cherry Carrying Place) is 300 paces long, and leads to Hill Lake, (Mountain Lake,) 7½ miles long, and a quarter to one-half mile in width.

10th, 11th, and 12th Portages.

17. The tenth portage is 640 paces long, and leads to Watab Lake: The eleventh portage is 3315 paces long, and terminates at Mud Lake, the source of Arrow River: About a mile from the east end of Mud Lake the portage begins, which leads to a small Lake, tributary to Wisacode river: This portage is about 1000 yards long: The stream, before entering the Lake, has a fall of 66 feet: The twelfth is 480 paces in length, and leads to Ashawinisitagon Lake.

The 13th portage leads over the height of land.

18. The thirteenth portage is 540 paces, and leads over the dividing ridge, between the tributaries of Lake Superior and those of Hudson's Bay, to the source of Rainy Lake River, passing into and through Gun-flint Lake, and thence into Lake Seiganogah, with numerous cascades and picturesque falls.

Advantages of the Pigeon River route:—Comparison of distances.

19. The Pigeon River route has the advantage of being much shorter than by the Kaministiquia, and on to the west side of the height of land it is said to possess facilities for boat communication, which are not enjoyed by the route from Mille Lacs to Rainy Lake: The lake and rivers through which it passes

having a greater body and depth of water: In former times it used to be much travelled by the voyageurs in the service of the North West Company: Grand Portage Bay is only 220 miles east of Rainy Lake, while Fort William, on the Kaministiquia, is 263 from the same point. (1)

A SKETCH OF CURRENT RIVER ROUTE TO THE GREAT DOG LAKE.

Current River Falls in Thunder Bay.

20. About six miles in a north-east by east direction from Fort William, on the Kaministiquia, the waters of Current River are seen to fall over a precipitous ledge of black aguillaceous Slate, within a few yards of their exit into Thunder Bay.

Character of the forests in the Valley of Current River.

21. A succession of rapids and cascades which in the aggregate, perhaps, exceed 40 feet in height, occur within the space of half a mile from the mouth of the River, and forests of canoe-birch, balsam, white and black spruce, tamarack and cedar, with mountain ash and other small trees, fringe its rocky banks and occupy its shallow valley.

Of the Soil.

22. The soil is of small depth, and reposes upon the slates, generally without the intervention of a sub-soil, but is covered, over large areas, with moss to the depth of one foot and more.

Country back of Thunder Bay.

23. Mr. McIntyre, the gentleman in charge at Fort William, stated that the vegetation and country back of Thunder Bay, in the valley of this small river, for a distance of about fifteen

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(1) For the foregoing brief notice of the Route by Pigeon River, as far as the height of land, I am indebted to the Report of Dr. J. G. Norwood, which will be found *in extenso*, in a Report on a Geological Survey of Wisconsin, Iowa, and Minesota by Dr. D. D. Owen, U.S.G., and to the Map constructed by David Thompson, Esq., in 1826, by order of the Commissioners, for the Boundary Survey.

miles, was similar to what we saw near its mouth: The moss which covers the thin coating of soil resting on the slates, increases in depth as we retire from the Lake, until it gives place to a better soil and timber of larger growth, within 12 to 15 miles in an air line from the mouth of the stream.

Current River, the winter route of Indians to Great Dog Lake.

24. The valley of this River forms the winter route of the Indians from Thunder Bay to Great Dog Lake, and while the Great Dog Portage, by the circuitous route of the Kaministiquia, is not less than 43 miles from Fort William, Great Dog Lake is reached by the Valley of Current River, in an 18 or 20 miles march from Thunder Bay.

A Road from Pointe Meuron, on the Kaministiquia River to Dog Lake, would save many miles of a difficult canoe route.

25. In making their winter journey to Great Dog Lake, the Indians generally proceed, we were informed, from the Mission in the neighborhood of Fort William to the mouth of Current River, and ascend its open and unencumbered course, reaching Dog Lake in one day from Fort William: A cursory inspection of the map will shew that the direct line of route from Fort William, or rather from Pointe Meuron, through the forest, if a track were cleared, would save several miles. (1)

Height of Dog Lake and length of portages on the Canoe Route.

26. The height of Great Dog Lake above Lake Superior is 710 feet, and to reach it in canoes by the route of the Kaministiquia involves portages, which in the aggregate amount to 325 chains, or four miles in length, with an ascent nearly equal to the elevation of Great Dog Lake, above Superior.

Importance of Current River Route.

27. As a means of communication between Thunder Bay and Great Dog Lake, the Indian Trail up the Valley of Current River, appears to be of sufficient importance to require this

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(1) In Current River speckled Trout are numerous, and its valley abounds with red and black currants, raspberries, strawberries, and gooseberries, wherever sufficient light and air for their growth obtains admittance, into the forest which covers the country.

special notice, and a bird's-eye view of the country, from the summit of the Great Dog portage, showed no mountainous range between that point and Lake Superior, apparently equal in altitude to the great barrier of Dog Lake, which at the summit from where the sketch which accompanies this Report was taken, exceeds 850 feet above Lake Superior ; it acquires additional importance from the fact that a travelled Indian canoe route and winter road exists between Dog Lake and Thousand Lacs, on the west side of the height of land.

A SKETCH OF THE NEEPIGON(²) ROUTE TO WINIPEG RIVER.

An Indian route not much travelled or known.

28. An Indian canoe route, respecting which little certain is known :—The Mission Indians on the Kaministiquia describe it as passing through a large number of Lakes, not figured on any Map to which I have had access, and communicating with Rainy Lake, by Mille Lacs, or with the Winipeg River, through numerous large Lakes, among which Lac Sal, near the height of land, is the most extensive.

Outlet of Neepigon River.

29. The Neepigon River has its outlet in Neepigon Bay, about sixty miles in a direction north-east from Fort William, but by the Canal route round the coast, a much longer distance.

30. The route from the Neepigon enters the Winipeg River, a short distance above Island Portage, by a large river, named English River, which is now used as a Canal route by the Hudson's Bay Company's servants, from Red River to Moose Factory, at the mouth of Moose River, on James' Bay, and formerly at rare intervals to Lake Superior.

(2.) Neepigon—dirty water—Nee-pi-gon.

CHAPTER II.

THE KAMINISTIQUIA ROUTE. THUNDER BAY TO GREAT DOG LAKE.

Thunder Bay, 31 — Entrance to the Harbour, 32 — The Welcome Island, 33 — Channel of the River, 34 — Banks of the River, 35 — Mission of the Immaculate Conception, 36 — McKay's Mountain, 37 — Maple on McKay's Mountain, 38 — The Village at the Mission, 39 — Freezing and thawing of the River, 40 — Indian Corn, 41 — Limestone exists, 43 — Remains of extensive settlements, 44 — Vegetation, 45 — Rapid, 45 — The Grand Falls of Kakabeka, 46 — Height of, 47, 48 — Alluvial Valley, 49 — Vegetation of, 50 — Area of Cultivable Land in, 51 — Limit of good Land, 52 — Falls and Rapids, 53 — Vegetation poor, 54 — Burnt Forrest, 55 — The Great Dog Portage, 56 — View from, 56 — Physical structure of the Great Dog Mountain, 57 — Much good land on the flanks of the Great Dog, 58 — Track of a Tornado, 59 — Black Spruce Swamp, 59 — Labrador Tea Plant, 59 — Coal Wells in Moss, 59 — Good Road on the Great Dog, 60 — Section of Great Dog Portage, 60.

Thunder Bay, position and extent.

31. Thunder Bay, which receives the waters of the Kaministiquia, (1) forms a portion of the north-west expansion of Lake Superior. It is the most southerly of three large and deep landlocked bays, which characterise this part of the coast; and it is situated between the parallels 48° 15′ and 48° 35′ north latitude, and in longitude 89°, and 89° west of Greenwich. Its greatest length in a north-easterly direction is 32 miles, and its breadth from Thunder Cape to the mouth of the Kaministiquia, upon which Fort William is situated, about 14 miles.

Entrance to the Harbor exceeds 180 feet in depth.

32. The main entrance to the Bay is between the imposing headlands of Thunder Cape, 1350 feet above the Lake level and Pie Island, five miles, south-west of the Cape, with an altitude of 850 feet. The depth of water in this broad entrance exceeds 180 feet, and a measure of 60 feet to 120 feet is maintained in many parts of the Bay.

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(1) Spelt Kaministikwoya; by Sir Jno. Richardson, "the river that runs far about."

The Welcome Islands, Water inside, 30 feet; Water on the Bar varies from 3½—5½ feet.

33. Immediately opposite, and east of the three mouths of the Kaministiquia, the Welcome Islands are distant about two miles, and inside of these Islands from 60 to 30 feet of water is shown on Bayfield's Chart. Within half a mile of the River's mouth the water shoals rapidly, and the Bar has a variable depth of three and a half to five feet and a half water upon it; but within one thousand yards of the north, or main channel, twelve to fourteen feet water is maintained. Land is forming fast near the mouths of the river, and large areas in advance of the increasing delta, sustain a thick growth of rushes.

Main Channel of River; Fort William situated on it; Aspect of the country about the Fort.

34. At a distance of about half a mile from the exit of the northern or main channel, Fort William is situated. Upon the left or north bank, and opposite, is a large Island formed by the middle channel of the Kaministiquia, which branches off from the main stream, about one and a half mile from the Bay. In the time of the North West Company, this island was denuded of the trees it sustained, which consisted mainly of tamarack for fuel and other purposes, and the greater portion is now covered with second growth. A large area south of the Fort still remains destitute of wood, and forms the site of an Ojibway Village, besides serving as an excellent open pasture ground for a herd of cows, belonging to the Hudson's Bay Company, which swim across the River every morning, a distance of 400 feet, and return at an early hour in the afternoon to the farm yard in the vicinity of the Fort.

Banks of River low.—Timber, Soil, &c.

35. The banks of the river here are low and flat, not exceeding ten feet in altitude: In the rear of the Fort, tamarack of small but dense growth prevails: The soil is a light sandy loam reposing on yellowish clay.

Mission of the Immaculate Conception.—Indian Reserve embraces much good land.

36. Two miles above the Fort, and in a direction nearly south from it, the third or southern outlet separates from the

main channel: The banks of the river continue to rise above the level of its waters until they attain, at the Mission of the Immaculate Conception, an altitude of eighteen or twenty feet: Near the Mission, the Indian Reserve of about twenty-five square miles begins; it embraces the best and largest area of cultivable land in the valley of the Kaministiquia, and much of it being situated on the flanks of McKay's mountain range, portions possess many advantages which do not belong to the available tracts near the shores of Thunder Bay.*

McKay's Mountain.

37. The general course of the river above the Mission for a distance of nine miles is towards the south-west, by very tortuous windings: Five miles from Fort William it approaches the base of the elevated table land, to which McKay's Mountain forms an imposing and abrupt termination. McKay's Mountain has an elevation of 1000 feet above the lake, and is the north-eastern boundary of an irregular but extended plateau, whose south-eastern flank follows the trend of the coast as far as Pigeon River.

Maple and other Hardwoods grown on the flanks of McKay's Mountain.—The area over which good timber extends is very large, following the trap ranges.—Soil at the Mission.

38. It is worthy of remark, that the flanks of McKay's Mountain support a heavy growth of hardwood timber (maple, &c.), and from various sources I was informed that this heavily timbered land stretches far to the south-west, on the side and borders of the table land. The rock formations which comprise the country between the Kaministiquia and Pigeon Rivers, indicate the presence of a fertile soil on the flank of the irregular table land; The trap with which the slates are associated, giving rise upon disintegration to a soil of superior character. At the Mission, a light reddish loam constitutes the soil; this

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* By Treaty concluded in 1850, between the Hon. W. B. Robinson and Joseph Jeande Chat and his tribe, a Reservation to commence about two miles from Fort William on the right bank of the river Kaministiquia, thence westerly six miles, parallel to the shores of the Lake; thence northerly five miles; thence easterly to the right bank of the said river, so as not to interfere with any acquired right of the Hon. Hudson's Bay Company.

reposes to the depth of six feet upon a bluish grey clay, which extends from the water's edge to ten feet lower.

The village of the Mission very thriving, and consists of 30 to 35 houses, well built of wood.

39. The Mission of the Immaculate Conception is under the charge of the Rev. Jean Pierre Choré, who has resided on the banks of the Kaministiquia for nine years. From that gentleman, who kindly afforded me every information respecting this valley in his power, I obtained numerous facts of interest in relation to its adaptation for settlement. At the Mission there are already congregated from thirty to thirty-five houses, substantially built of wood, and in their general arrangement and construction far superior to the log houses of Canadian pioneers in the forest. Many of them were surrounded with gardens, a few of which were in a good state of cultivation, and with some small fields fenced with post and rail.

Freezing and thawing of the river, 15th November and 10th April.

40. The average period of the river freezing, is from the third to the fifteenth of November, and it becomes free from ice between the twentieth and twenty-third of April. The present year has proved an exception in many respects; the ice did not pass out of the river until the thirteenth May, and on the first of August, the day of my visit, the waters of the river were higher than they had ever been known before at that at that season of the year.

Indian corn does not ripen at the Mission, but ripens in flank of McKay's Mountain.

41. Indian corn will not succeed in this settlement, early and late frosts cutting it off. Frost occurs here under the influence of the cold expanse of Lake Superior, until the end of June, and begins again towards the end of August. A few miles further up the river, west of McKay's Mountain, the late and early frosts are of rare occurrence, and it was stated that Indian corn would ripen on the flanks of McKay's Mountain.

Four or five miles up the river many vegetables succeed well, which will not grow near the lake.

42. All kinds of small grain succeed well at the Mission, and the reason why they have not been more largely cultivated is

owing to the want of a mill for the purpose of converting them into flour or meal. Near the lake, at Fort William for instance, oats do not always ripen; the cold air from the lake, whose surface fifty miles from land, showed a temperature on the close of the hottest month of the year, of 39° 5′, is sufficient to prevent many kinds of vegetables from acquiring maturity, which succeed admirably four or five miles up the river.

Limestone exists in the neighborhood.—Ruins of a kiln seen.

43. Fragments of limestone have been procured in the neighbourhood, but the locality could not be pointed out by any of its inhabitants. The ruins of a lime kiln, used by the North West Company, have been discovered, and it is very probable that the limestone was obtained from the crystalline layers, the existence of which has been established over wide areas in Thunder Bay, by Sir William Logan, and are noticed by him as being of a "reddish white color, and very compact, some of which would yield good material for burning." These beds of impure limestone are mentioned by Mr. Murray (Geological Survey, Canada, for 1846–7) as occurring in the lower portions of the formation occupying this valley (1).

Remains of extensive settlements not uncommon.

44. It is worthy of notice that substantial records of far more extensive settlements than now exist, and a higher degree of civilization and improvement are found at or near the various Posts along this route, and particularly at Fort William, which date from the time of the North-West Company: many of these lie only in the recollection of the voyageurs. There is reason to believe that much valuable knowledge respecting the resources of particular localities has been forgotten, or is hidden in the memories of those who may have neither interest or opportunity to make it known. For an account of the progress of the seasons at Fort William, see Appendix (1).

Clay banks of the River, vegetation rich and luxuriant.
First Rapids.

45. Opposite McKay's Mountain the clay banks of the river were about fifteen feet high, and continued to rise on one

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(1) Geological Survey of Canada—1846-7: Page 15.

side or the other until they attained an elevation of nearly sixty feet, often however retiring from the present bed of the river, and giving place to an alluvial terrace, some eight or ten feet in altitude, and clothed with the richest profusion of grasses and twining flowering plants. The current begins to be rapid about nine miles from Fort William soon after passing Point de Meuron the site of a fort established by Lord Selkirk, and continues so, in the ascending course of the stream, to the foot of the first demi-portage, called the "Decharges des Paresseux," where a rock exposure creates the Rapids which occasion the portage. The fall here is 5 feet 1 inch, in a distance of 924 feet. The distance of this portage from the lake, by the windings of the river, is about 22¼ miles, and the total rise probably reaches 39 feet.

The Grand Falls of Kakabeka.

46. The current continues rapid up to the foot of the Grand Falls, and high rock exposures commence on the precipitous three miles banks below them. These gradually assume the form of mural cliffs, capt with drift increasing in altitude until they attain at the foot of the Grand Falls, the height of about 160 feet on the left bank, while on the opposite side of the river the mountain portage path winds round the steep of a bold projecting escarpment, 91 feet in altitude, and nearly half a mile from the falls.

Height of the Grand Falls.

47. At our camp, seven miles below the Grand or Ka-ka-beka falls as they are termed, the level of the river was estimated to be 40 feet above Lake Superior, and the foot of the falls sixteen feet higher. The Grand Falls themselves were found by levelling, to have an altitude of 119.05 feet, and involved a portage of 62 chains or ¾ of a mile. They are distant from the mouth of the river by its windings about 30 miles, and in an air line seventeen miles.

Altitude of the Grand Falls by different observers.

48. As the altitude of these falls has attracted the attention of several observers, the different results obtained may not be without interest:

	Feet.
Altitude ascertained by levelling, (Mr. Dawson, August, 1857)	119.05
Capt. (now Col.) Lefroy, barometrical measurement	115,00
Mr. Murray, of the Canadian Geological Survey.	119.00
Major Delafield	125.00
Sir John Richardson, barometrical measurement.	127.00
Lieuts. Scott and Derry (1)	130.00

Summit of Falls above Lake Superior: 119.05+56.20=175.25.

Breadth of the Alluvial Valley of the Kaministiquia.

49. The alluvial valley of the river from about three miles below the Mountain Portage to Fort William varies in breadth from a few hundred yards to one mile; the breadth occupied by land of a quality which might fit it for agricultural purposes, extends to near the summit of the flank of a low table land, which marks the true limit of the river valley, and the average breadth of this may be double that of the strictly alluvial portion.

Vegetation of the Valley.

50. The low table land is thinly wooded with small pine, and the soil is poor and dry; the alluvial valley sustains elm, aspen, balsam, poplar, ash, butternut, and a very luxuriant profusion of grasses, vetches, and climbing plants; among which the wild hop, honeysuckle and convolvulus, are the most conspicuous. The rear portion of the valley, with an admixture of the trees just named, contains birch, balsam, white and black spruce, and some heavy aspens. The underbrush embraces hazelnut, cherries of two varieties, &c.

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(1) See page 361 of the New York Edition of Sir Jno. Richardson's Arctic Searching Expedition.

Area of cultivable land in the Valley of the Kaministiquia exceeds 20,000 acres, not including the flanks of McKay's Mountain.

51. Occasionally the flanks of the low Table land approach the river, contract the valley, and give an unfavorable aspect to the country. This occurs near the Decharges des Parresseux, and at most of the heavier rapids. The area, available for agricultural purposes below the Grand Falls, probably exceeds twenty thousand acres; but if the flanks of McKay's Mountain be included in the estimate, a large addition may with propriety be assumed.

The Grand Falls mark the limit of available country for agricultural purposes in the Valley of this River.

52. The Grand Falls mark the limit of a tract of country differing in many important physical aspects from the valley of the river lower down. From black argillaceous slates we pass to a region in which granite, gneiss, and chlorita schist prevail, and where the vegetation is often scanty and poor.

Falls and Rapids with their descents.

53. The course of the River is almost due north to Little Dog Lake, and its flow much broken by falls and rapids, which occasion in a distance of nineteen miles, six portages and five discharges: The Falls have respectively an altitude of 6.59 feet: Ecarté Portage (Nicolet Portage) 12.62 feet; Portage de L'Isle, (third above Ka-ka-be-ka) 6.90 feet; Recousi Portage, (fourth above Ka-ka-be-ka) 25 feet; (Couteau Portage) 3 feet; (Portage des Martres) and 14.94 feet (Little Dog Portage.)

Vegetation poor.

50. In the forests which lined the banks at the different discharges, the canoe birch was frequently seen eighteen inches in diameter: The under brush consisted chiefly of hazel nut; wherever the gneissoid and syenite rock prevailed, the valley of the River was much contracted, the timber light, and the soil shallow and full of boulders or detached masses of rock: The volume of water in the river appeared to be very small, considering its unusual height at this season of the year:—An approximate measurement at one of the rapids gave a breadth of seventy with an average depth of two feet.

Burnt Forest.—Luxuriant Vegetation on the Great Dog Mountain.

55. Extensive areas covered with burnt forest trees, consisting chiefly of pine, occur in the valley of the River, as far as Little Dog Lake, when the formidable barrier of the Great Dog Mountain, sustaining a heavy growth of timber, comes into view: Occasionally aspens of large dimensions may be seen from the canoe, but it is not until the plateau of the Great Dog Mountain is attained that they acquire a diameter reaching eighteen or twenty-four inches, five feet from the ground: Trees of this species, and of the above dimensions, are found in abundance on the elevated barrier which separates the region of Great Dog Lake from the valley of the Kaminisitiquia, 347.81 feet below.

The Great Dog Portage elevation above Little Dog Lake.—View from the Great Dog Mountain.

56. The Great Dog Portage (1) rises 490 feet above the level of the Little Dog Lake, and at the greatest elevation of the ridge cannot be less than 500 feet over the same Lake: The difference between the levels of Little and Great Dog Lakes is 347.81 feet, and the length of the portage between them one mile and fifty-three chains: The view from the summit of the Great Dog (more than 700 feet above Lake Superior) is very striking: Little Dog Lake lies at our feet, an unbroken forest of pines dotted with groves of aspen and birch, and in the swamp portions with tamarack, stretches in all directions, from east to west, being bounded in the view by the distant undulating outline of the wooded hills, which limit the valley of the Kaministiquia:— A portion of the abrupt escarpment of the elevated table land in the neighborhood of McKay's Mountain, was distinctly visible.

Physical structure of the Great Dog Mountain.

57. The base of the Great Dog Mountain consists of a gneissoid rock supporting numerous boulders and fragments of the same material: A level plateau of clay then occurs for about a quarter of a mile, from which rises, at a very acute angle and

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(1.) See Section No. 1.

to an altitude of 283 feet above Little Dog Lake, an immense bank or ridge of stratified sand, holding small water worn pebbles: The bank of sand continues to the summit of the portage or 185 feet above the clay plateau: The portage path does not pass over the highest part of the sand ridge: East of the path it is probable that its summit is 500 feet, as before stated, above the Little Dog Lake.

Much good land on the flanks of the Great Dog Mountain,

58. In an endeavor to reach the head of Little Dog River, before it begins to make in its short course of (1) about four or five miles, a descent of 347 feet, I found that much of the soil on the flanks of the Great Dog Mountain, was far superior to the average quality in the valley of the Kaminisitiquia: It consisted of a clay loam, with a gravelly subsoil, containing numerous pebbles and water worn fragments of rock; this was particularly noticed on the flanks and surface of the lower plateau. (See section of Great Dog Mountain.)

Track of a Tornado.—Black Spruce Swamp.—Cool Wells in the moss of the Black Spruce Swamp.

59. The upturned roots of trees in the track of a tornado, which must have occurred here some years since, afforded an excellent opportunity of examining the soil and subsoil of the lowest plateau, and the flank of the upper one: The upturned roots of large aspens, birch and pine, showed everywhere a gravelly loam containing pebbles from one to six inches in diameter: On approaching the source of Little Dog River a black spruce swamp was found to occupy an extensive area, but little above the level of the river. The clay soil in this swamp was covered to the depth of two feet with moss, which was again largely overgrown with the Labrador tea plant: Small holes in the moss, filled with clear, cool water, afforded a striking contrast to the heated water of the rivers and lakes; the temperature of these shallow wells did not exceed 42°,

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(1) Little Dog River is a continuation of the Kaminisitiquia, but in accordance with the Indian custom it is named from the Lake into which it flows.

while the water of Great Dog Lake, tested a few hours afterwards, (half-past 5, P. M.,) was 69°, a difference of 27°.

A good Road could be constructed in the flanks of the Great Dog Mountain, and the one hundred and forty-three feet of ascent.—Section of Dog Portage.

60. The Great Sand Bank declines in steppes towards the River, and by turning its flank, an excellent level road on the side of the first plateau could be constructed, with a length not exceeding twice that of the present portage path, which rises over 140 feet above the lake to which it leads: The following section, kindly furnished me by Mr. Napier, will exhibit the relation of the several plateaux to one another, and to Great Dog Lake.

NO. 1. SECTION OF GREAT DOG LAKE.

Height in Feet.	Distance in Feet.	LITTLE DOG LAKE.
o	o	
163.53	1000	Beginning of 1st Plateau.
215.00	1450	Termination of do.
251.74	1650	Beginning of 2nd do.
283.78	2550	End of 2nd Plateau, and commencement of Sand Bank.
468.19	3300	Commencement of 3rd Plateau.
472.00	5920	End of 3rd Plateau.
490.00	6180	Summit of level and commencement of 4th Plateau.
474.00	7400	End of 4th Plateau, and commencement of descent to edge of Cliff.
395.00	8680	End of descent.
348.00	8712	Bottom of Cliff, and level of Great Dog Lake.

CHAPTER III.

GREAT DOG LAKE TO THE HEIGHT OF LAND.

Area of Great Dog Lake, 61 — Vegetation, 61 — Depth of water in Great Dog Lake, 62 — Distance from Fort William, 63 — Former extension of, 63 — Great Dog Lake an old centre of communication and is connected with Mille Lacs, 64 — Many other routes probably exists, 65 — Professor Keating speaks of these routes 33 years ago, 66 — Valley of Dog River, 67 — Banks alluvial, 67, 70 — Ancient Forest, 71 — Action of ice, 72 — Labrador Tea, 73 — Dam at mouth of Little Dog River, 73 — Climate, 74 — Action of ice, 74 — Prairie River, 75 — Sources of Dog River, 76 — Height of Land Barrier, 77 — Prairie Portage, 78 — Height of Land Lake, 78 — Vegetation of Prairie Portage, 79 — Height and Distances, 80, 81 — Temperature of Lakes and Rivers, 82.

Area of Dog Lake about 200 square miles.

61. The area of Great Dog Lake, according to Mr. Murray, (1) whose opportunities of examining it were considerably greater than those of the members of the Exploring Expedition, probably exceeds 200 square miles; and, according to that gentleman, the country surrounding it is hilly, and covered with Forests in which white spruce prevails, interspersed with groves of aspens, and occasionally dotted with the Weymouth (white) and Banksean (red) pines; white and yellow birch are abundant, and some of them of large dimensions. The lake is bounded by bold primary rocks, and studded with innumerable islands.

Depth of water in Great Dog Lake very great.

62. The traverse of the canoe route, from the head of the Great Dog Portage to the mouth of Dog River, is about 11 miles in length, and the lake is seen to stretch far to the north of the last named point; the canoe route follows closely the direction of its longest diameter, which is nearly due north and south; the depth of water, as ascertained by occasional soundings along the line of traverse, is very considerable. In one instance, 72 feet was recorded about 200 yards from a low rocky shore, and

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(1) Report of Progress for the year 1846–7.

another sounding showed 90 feet half a mile from land; both of these soundings are marked on the Map which accompanies this Report.

Distance of Great Dog Lake from Fort William, 18 miles, in an air line.
Former extension of Dog Lake visible.

63. The position of this lake in relation to Thunder Bay, is interesting, as it forms the termination of a long land traverse from Current River, which is used by the Indians during the winter season; its distance in an air line from Fort William, is about nineteen miles; whereas, by the windings of the Kaministiquia, it is 55½ miles; the former extension of Dog Lake in a westerly direction up the valley of the river of the same name for 14 or 15 miles, is probably shown by numerous sand ridges which cross the valley of Dog River nearly at right angles to its course, as well as by the probable former extension of a portion of the Great Sand Ridge Barrier, which has been described as occurring at the Great Dog Portage, across the valley of the Little Dog River.

Great Dog Lake an old centre of communication for the Indians.
Is connected with Mille Lacs.

64. Great Dog Lake appears to be a certain centre of communication to which some degree of speculative interest may be attached; our guides pointed out the direction from one of the great westerly bays, through which a communication with Thousand Lakes, on the other side of the water shed. No doubt the route through this communication passes through extensive marshes, yet, if it avoids the objectionable ascent of Prairie River and Portage, it may be worthy of attention. Thousand Lakes, or Mille Lacs, as it is more commonly called, is ———feet above Lake Superior, consequently above Dog Lake.

This route an old route.—Many others probably exist.

65. This route has long been known to the voyageurs and to the Indians about Fort William, and the same may be remarked of many other routes of which the Indian guides speak, and attempt to describe. Thirty-three years ago it was an old "path," and may have been one for centuries to the Indians of

this region. No doubt that water communications superior to those now travelled may yet be found, but it seems clear that until the water shed of Rainy lake is reached, no communication holding up sufficient water to form a boat route exists, or can be made without extensive and repeated dams.

Professor Keating speaks of this route 33 years ago.

66. Professor Keating, so far back as 1823, relates that his party were shown an arm of the Lake which extends to the south-west, and which they were informed connects Great Dog Lake by an uninterrupted water communication with the Thousand Lakes. The route is shorter than that by Prairie Portage, but much filled with rapids. The same authority says that there is a communication between the Kaministiquia and Thousand Lakes passing more to the south than that from Dog Lake. (1)

Valley of Dog River flooded in spring, extending Dog Lake many miles in a westerly direction.

67. So sluggish is the flow of water in Dog River that a rise of 10 feet in the level of the lake would push back its waters to a distance of 35 miles up the tortuous course of that stream, and the voyageurs relate that in the spring of the year they are accustomed to paddle their canoes over the tops of the willows which fringe its banks below the first rapids, fourteen miles in an air line from the mouth of the river; the greater portion of the intervening valley being then under water.

Banks of the River alluvial.—Depth small, 23 feet; rises in spring 10–15 feet at the upper end of its valley.

68. The banks of Dog River are altogether alluvial, for some distance up the valley, with the occasional exception of the abrupt sand-cliffs noticed, which come upon the river and seem to form the termination of ridges, which traverse the valley at nearly right angles to the course of the stream. Recent water marks showed a rise of five feet within three miles of the mouth of the river, and the shores of the lake itself

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(1) Narrative of an Expedition to the source of the St. Peter's River, &c, &c., by Wm. H. Keating, A. M. S., 1824.

indicated a recent water level about four feet above its present height, (August 8th.) Higher up the stream, a recent rise of six feet was indicated. The banks showed alder bushes, willow, dogwood, and tamarack; its average breadth is about 80 feet in ordinary seasons; its general depth at this period of the year cannot be above two or three feet, as we were informed by our steersman, that he has often known canoes to be constantly impeded by shallows and drift islands, at times when the level was probably four feet lower than during the present extraordinary season.

Dog River connects with the Neepigon, and the Neepigon with English River.—Winipeg River—(see paragraph.)

69. The average height of the bank rises from four feet, a short distance from the mouth of the river, to ten feet, fourteen miles further up. At nearly every turn, newly formed oval and elongated banks of sand protruded and showed a general elevation of five feet above the present level. Low hills of granite begin to narrow the valley, after passing a small stream coming from the north, and said to lead to a communication with the Neepigon.

The Valley of Dog River.

70. From the summit of a low granite hill, perhaps 200 feet above the river bed, the surrounding country was distinctly mapped out at our feet. The valley of the river appeared to have a breadth of a mile at our point of view, widening out in the direction of Dog Lake, and contracting towards the height of land between low ranges of granite hills, which did not seem anywhere to exceed 200—280 feet in altitude.

Remains of an ancient forest seen.

71. Some of the hills consisted of bare rock, others were covered with a young forest growth, which seemed to consist chiefly of the Banksean pine and aspen. In the distance the tops of a few hills showed clumps of red pine standing erect and tall above the surrounding forest. They may be the remnants of an ancient growth, which probably once covered a large portion of this region, having been destroyed by fire at different epochs, as large areas were still strewed with the blackened

trunks of trees; and in the young bush which seems fresh and green at a distance, the ground was found to sustain the charred remains of what had once been a far more vigorous vegetation.

Hill abraded—probably by ice.—The Labrador tea common.

72. The low ranges of hills bear a great outward resemblance to those which surround Dog Lake. No precipitous escarpments are visible, but most of them have a rounded dome-like aspect, and close inspection of some of them gave strong indications of the abrading action of ice. Large quantities of Labrador tea (ledum palustre), were seen everywhere we landed. The flow of the river until we approach a stronger current, 25 miles from Dog Lake, varies from a half to one mile an hour.

General character of the Valley of Dog River, similar to that of Dog Lake.—Effect of a Dam at the mouth of Little Dog River.—Boulders left by ice on a ledge of rock, on the margin of the river.

73. The general character of this valley is very uniform, and the idea presented to the mind in endeavoring to picture its aspect when covered with water in the spring, was that a general rise of 20 or 25 feet would give it an appearance very similar to Great Dog Lake; with analogous deep bays formed by the valleys of its tributaries, and having on its shores hills of the same altitude, and similar formations as are found bordering the lake below: in fact a high (25 feet) dam, as has already been hinted, at the source of Little Dog River, might perhaps convert Dog Lake into a magnificent sheet of water, having in a westerly direction a farther extension of at least fifteen miles. It would remain, however, to be ascertained whether Dog Lake has not other outlets than the one which leads through Little Dog River. It is not at all improbable that this may be the case.

Difference in the climate of the Grand Falls and this part of the Dog River Valley. Difference in altitude 542 feet.

74. At our camp on the 9th of August, at the head of a small portage round a fall of 3½ feet, about 3 miles below the mouth of Prairie River, blue berries, not yet ripe, were very abundant, showing a marked difference in the climate of this

spot and the Grand Falls, where, some days before we had found them perfectly ripe, and in the greatest profusion. The difference in elevation is about 542 feet. About a quarter of mile from the camp, in our course up the river, we came upon a bare granite hill, about 250 feet high, ascending from the water's edge, at an angle of nearly 45°. Its surface, consisting of smooth rounded ridges, and about 15 feet above the river a collection of water-worn boulders, from 6 inches to 2 feet in diameter, were deposited upon a ledge, leading to the inference that they had been left there by ice during spring freshets, and so far showing some confirmation of the statements of the Indians respecting the remarkable rise of water in the long valley during the spring months.

Prairie River only 10 feet broad.—Dog River.

75. The last portage on Dog River in the canoe route to Fort Francis, is the Jourdain Portage, four miles in an air line from the height of land. It involves an ascent of 8.60 feet by a portage 6½ chains long; a very short distance above it, the mouth and windings of Prairie River are seen with difficulty through the tall rushes which seek to conceal its course for a distance of 200 or 300 yards. Up this little streamlet, scarcely 10 feet broad, the canoe route lies, while Dog River, still measuring a breadth of 40 feet, can be traced far to the north by a succession of small lakes and ponds which mark its course.

Description of Dog River to the feeding swamp.

76. Mr. Murray, of the Geological Survey, ascended Dog River up to its feeding marsh in 1847, and describes its course after receiving Prairie River, through which our route lay, as "turning off nearly due north, and widening out into a long "narrow lake for about 2 or 3 miles, after which there follows "in the same line a chain of 12 twelve small lakes, or ponds, "connected by short rapid streams, comprised within the distance of 10 to 12 miles. The uppermost pond appeared at "its northern extremity to terminate in a great marsh, which "was supposed to be the ultimate source of the river, and to "extend far and wide along the height of land, probably join-

"ing the Great Marsh of the Savannah Portage on the Red "River route" (1).

77. Prairie River is scarcely more than 10 feet broad at its mouth, and for a few hundred yards it is so thickly fringed with rushes that two canoes cannot proceed side by side, or even pass one another with facility. The length to Cold Water Lake is about 1¾ mile, in an air line, and perhaps nearly double that distance by its windings; its general course is a few degrees to the south of west. Much of the route towards the high barrier of land at Cold Water Lake, which now comes into view, lies through small marshy lakes or ponds, three in number, and the whole distance does not exceed three miles. The barrier behind Cold Water Lake, which stretches far to the north and south, may rise 200 or 220 feet in height, the end of the portage path over it, according to measurement at the height of Land Lake, being 157 feet above the lake. It constitutes the great and formidable prairie, or height of Land Portage, two miles and five eighths of a mile long. Cold Water Lake is well named on account of its temperature. Careful observation made it 41°5, and the large spring or source which feeds it, and gives rise to the Prairie River, gushes out of the rocky side of the barrier, about 50 feet above the lake, with a temperature of 39°5.

Prairie Portage does not pass over the highest land between Lake Superior and Rainy Lake.—Height of Land Lake 157 feet above Cold Water Lake, and 885 above Lake Superior.

78. Prairie Portage passes over the height of land, but not the highest land on the route, and its course lies first south-west up a steep wooded hill, without rock exposure, but composed of drift clays, sand, and numerous boulders; it then enters a narrow valley, which terminates in a small lake, about five acres in area, and 20 feet deep, occupying a hollow among the hills on the height of land. The portage path continues on in the same direction until the Height of Land Lake is

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(1) Report of Progress, 1846-7.—Prairie River 10 feet broad.—Height of land barrier rises 220 feet above Cold Water Lake, at the foot of the height of land.

reached, a small sheet of water, about a square mile in area, and 157 feet above Cold Water Lake. The utmost elevation reached on the Prairie Portage is probably 190 feet above Cold Water Lake, or nearly 900 feet above Lake Superior. It is probable that no hill within sight attained an elevation exceeding 20 or 30 feet above this limit. Mr. Dawson makes the height of Land Lake 879 feet above Lake Superior.

Prairie Portage sustains good sized Spruce and Pine.—Labrador tea common.—Fragrant Indian tea common.

79. Prairie Portage sustains some spruce and pine of fair dimensions, one pinus banksina measured 5 feet 9 inches in circumference four feet from the ground, and many of equal dimensions were seen in the neighborhood. A considerable portion of the timber is burnt, and the underbrush everywhere shows a profusion of hazel nut, and small shrubs and plants, such as raspberries, blue berries, gooseberries, and strawberries, all of which were here gathered ripe: The Labrador tea (ledum palustre) was in great profusion in particular spots, and at the termination of the portage, near the height of Land Lake, the fragrant Indian tea plant (ledum talifolium) abounded in the moss bordering this elevated sheet of water, which is 885 feet above Lake Superior, or 1485 above the sea.

80. The following estimates of the heights of Prairie Portage above the sea, are taken from Sir John Richardson's "Arctic Searching Expedition." (1)

	Feet.
Dog Lake, above Lake Superior	657
Ascent of Dog River	14
Portage to Cold Water Lake	2
West end of Prairie Portage, and Middle Portage	161
Lake Superior above the Sea	641
Height of Prairie or Middle Portage above the sea	1475

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(1) Arctic Searching Expedition,—a Journal of a Boat Voyage through Rupert and the Arctic Sea, in search of the discovery ships under Sir J. Franklin, by Sir John Richardson, C. B.: American edition, 1854.

81. "In 1849, the height of the upper end of Dog Portage "was ascertained by me with Delcro's barometer: In the "previous season the aneroid barometer gave 328 feet as the "height, which was a greater degree of accordance between "the instruments than I generally found. Major Long estimates "the watershed between Lakes Winipeg and Superior, at "1200 feet above the tide: Major Delafield calculates the "height of Cold Water Lake at 505, to which if 161 be added "for the Prairie Portage, and 641 for Lake Superior, we have "1307 feet for the height of Prairie Portage over the sea:— "Captain Lefroy, by barometrical measurements, made in con- "nection with the Observatory at Toronto, makes the west end "of Prairie Portage 1361 feet above the sea; but the distance "between the two places of observation renders the result liable "to some error."

Temperature of Lakes and Rivers.

82. Table of the temperature of Lakes and Rivers from Lake Superior to the height of land:

Name of Lake or River.	Temp. of Lake or River.	Day.	Hour.
Lake Superior, 50 miles from land	39°5'	July. 30	Noon.
Lake Superior, 4 miles from the Paps	46°	31	
Thunder Bay, 500 yards from mouth of Current River,	65°	Aug. 2	4 P. M.
Kaminisitquia, opposite the Mission	70°	2	1 P. M.
Kaminisitquia	68°	3	6 A. M.
"	65°	4	6 "
"	65°	5	6 "
Spring at Kakabeka Falls	45°	5	Noon.
Kaminisitquia	65°	"	"
Water in Spruce Swamp, Great Dog Portage	42°	8	Noon.
Great Dog Lake	69°	"	5 P. M.
Dog River	69°	9	3 P. M.
"	68°	10	6 A. M.
"	66°	10	10 "
Prairie River	62°	10	10½ "
First Lake on Prairie River	59°	10	11
Reedy Swamp	63°	10	11½
Lake at foot of Prairie Portage	56°	10	12
Mouth of stream issuing from Cold Water Lake	46°	10	12
Cold Water Lake	43°	10	12
Cold Water Lake	41°5	10	12½
Sources of Prairie River, one of the sources of the St. Lawrence	39°5	10	1

CHAPTER IV.

THE HEIGHT OF LAND LAKE TO RAINY LAKE.

Height of Land Lake, 83 — Savanne Lake, 83, 84 — Savanne Portage, 85 — Savanne River, 86 — Vegetation and Banks of the River, 87 — Mille Lacs, 88 — Sail Rocks, 89 — Baril Lake, 90 — Ancient Line Forest, 90, 91 — Scenery of the Side Hill Path, 91 — Height of Brulé Hill, 92 — Importance of the region about Mille Lacs, 93 — French Portage, 94 — Ancient Forest near Pickerel Lake, 95 — Vegetation of Portage de Pins, 96 — Scenery and Country about Sturgeon Lake, 100 — Cascades of Sturgeon Lake, 101 — Island Portage, 102 — Nameaukan Lake, 103 — Rainy Lake, 103.

Height of Land Lake.—Savanne Lake.—Pitcher Plant.

83. The summit or height of Land Lake is about the third of a mile broad, but its length from north-west to south-east could not be determined on account of the vast expanse of rushes, with islands of tamarack, which seemed to blend it with an extensive marsh stretching far in both directions. A portage about half a mile in length, letting us down 16¼ feet, brings Savanne Lake into view. The shores of this reedy expanse of water are fringed with Labrador and Indian tea, and here, too, for the first time, the beautiful Indian Cup or Pitcher Plant, (sarracenia purpurea,) once so common at the Grenadier Pond near Humber Bay, Lake Ontario, was seen in great profusion. From near the summit of a pine tree, a slight depression to the north and north-east of the dividing ridge was observed in the generally level outline of the horizon; by this depression it seemed probable that the waters of the height of Land Lake and its connecting swamps drained into Dog River. With this exception the horizon appeared to be perfectly uniform, the slight difference in the height of the tamaracks and spruces, which seemed most to abound, furnishing the only deviation from a perfectly level expanse in all other directions.

Savanne Lake tributary to Hudson's Bay.—Connection between watersheds not uncommon.—Savanne Lake.

84. The Savanne Lake with its feeding swamps may therefore be considered to be the source of the waters which, in this lati-

tude, send tributaries to Hudson's Bay; although the Indians say that there exists a connection between the height of Land Lake and Savanne Lake; the portage between them is named Portage de Millier, and passes over a low sandy ridge supporting small pine, and at its edge tamarack and spruce. The connections, indeed, which exist between different water-sheds, by means of the swamps, impassable to a small canoe, at the height of land, are by no means of rare occurrence. In the present case we have the height of Land Lake sending its waters both to the St. Lawrence and to Hudson's Bay; but if we go a little further south, we find that in the territory of the United States, these interlockages are numerous and complex. (1) The St. Croix Lake, connecting the Mississippi with Lake Superior; the west fork of Bad River and the Nemakagon at Long Lake, establishing the same connection; and the Big Fork, which flows into Rainy River, thence into Hudson's Bay, is connected with the Ondodawanoan River, a tributary of Lake Winibigoshish, through which the Mississippi flows. Savanne Lake is about one mile broad· at its south-westerly termination begins the Great Savanne Portage, as well as its outlet, in the form of a small stream, much encumbered with fallen trees, and connecting with Savanne River; by this small stream canoes pass when the water is high, and thus avoid the troubles of the Great Savanne Portage.

Condition of Savanne Portage.—Remains of old road.—Portage once good.—Can be made good at small cost.

85. This common dread of the voyageurs is one mile and forty-one chains in length; it descends 31¼ to Savanne River, and consists of a wet tamarack swamp, in which moss grows every where to the depth of one foot, or eighteen inches; the moss is supported by a retentive buff clay, which is exposed at the western extremity of the portage. The remains of an old road, probably constructed in the time of the North West Company, passes through it, and is formed of split trees, now in a

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(1) See Dr. Norwood on this subject, in the Geological Survey of Iowa, Wisconsin, &c. &c.

thorough condition of decay. The same may be said of all the swampy portages along this line of route. In the time of the North West Company, this portage was doubtless one of the best, considering its length and general character, but now a false step from a rotten or half floating log, precipitates the voyageur into eighteen inches of moss, mud and water. No physical impediment appears to exist which would prevent this portage from being drained at a very small cost, and converted into one of the best on the whole line of route.

Savanne River.

86. Savanne River, to which it leads, is very rapid a little above the landing place; but by wading up the stream for about a quarter of a mile, the occurrence of dead water without froth or bubbles, showed that the feeding swamp or lake was near at hand. Savanne River is about twenty-five feet broad here, and it continues a very meandering and crooked westerly course of about thirteen miles to Mille Lacs, or Lake of the Thousand Islands, as it is sometimes termed.

Banks of the River.—Vegetation.

87. The banks of this river are altogether alluvial, and diminish gradually from ten feet in altitude, near its source, to the level of Mille Lacs, at its entrance into that extensive and beautiful sheet of water. The immediate banks of Savanne River are clothed with alder, willow, and dogwood; behind these are seen tamarack, pine, spruce, and aspen. Near its mouth much marshy land prevails, and at its confluence with Mille Lacs, is characterised by a large expanse of rushes and other water plants common in such situations.

Area of Mille Lacs.

88. Mille Lacs is described by the Indians as extending in a direction due west much farther than was visible from the canoe route, on account of the numerous islands with which it is every where dotted. In the lower portion of the Savanne River many large ponds and reedy lakes, connected together by small

water courses, join with the main river, and indicate the great extension which Mille Lac assumes in an easterly direction during spring freshets. It appears very probable that a length of thirty miles, with an average breadth of six—ten miles may be taken as a fair representation of this remote sheet of water; the canoe route through it is twenty-one miles in length, from the mouth of the Savanne to Keg or Baril Portage; granitic dome-shaped islands are very numerous, and occasional exposures of clay and sand banks come into view on the points and islands along the line of route.

White quartz, sail rocks.

89. The hills here and there bear pine of fair dimensions, while in the narrower and shallower valleys between them there is every indication of hardwood over large areas. Exposures of white quartz are repeatedly seen on the islands and main land at the western extremity of the lake; and not unfrequently are they taken by travellers during their first voyage for the sails of distant boats. The name "sail rock," given to them by the voyageurs, is derived from this erroneous impression. Where the lake narrows on approaching Baril Portage, gneissoid hills and islands about 100 feet high showed a well defined stratification dipping north, at an angle of about 15°, and on that side smooth, and sometimes roughy polished on the south side, precipitous and abrupt. The same character was noticed at the Baril Portage, which has a length of sixteen chains eighty-five links, with an altitude of 72½ feet, and an ascent of 1·86 feet. The north-eastern exposure of the rocks here was smooth, the southern rugged and often precipitous.

Baril Lake—Large dead pines—Large living pines.

90. Baril Lake is seven and a half miles long, and is the counter part of the western extremity of Mille Lacs. It is terminated by the Brulé or Side Hill Path Portage twenty-one chains long, leading to Brulé Lake forty-seven feet below Baril Lake. At Brulé Portage I ascended a steep hill bordering a small rapid stream called Brulé River, and from an ltitude of

fully 200 feet, had a fine view of the surrounding country. The vegetation upon the hill side and summit was truly astonishing, and the term Brulé Portage received an unexpected interpretation on finding hidden by a rich profusion of brushwood, the dead trunks of many noble pines. Throughout the day the tall trunks of white pine, branchless and dead, rising in clumps, or in single loneliness far above the forest, had attracted attention, and on the side of the Brulé Hill we observed many prostrate half burnt trees of the largest size. One dead trunk was measured and found to have a circumference of twelve feet five inches from the ground. A living tree, tall and clean, and apparently quite sound, measured nearly ten feet in circumference, and many of the prostrate pines were of equal dimensions.

Ancient white pine forest.—Luxuriant second growth.—Scenery of Side Hill Path.

91. There can be little doubt that these were the remains of a magnificent white pine forest, which extended formerly over a vast area in this region, since from the summit of the hill these remains in the form of scattered living trees, or tall, branchless scattered trunks met the eye in every direction. The second growth indicated a soil not incapable of sustaining pine trees of the largest proportions; black cherry, birch, white and black alder, small clumps of sugar maple, and a thick undergrowth of hazel nut now occupies the domain of the ancient forest. The south-west side of this hill formed a precipitous escarpment 150 feet above the waters of a long clear lake. All around the eye rested upon low dome shaped hills dipping towards the north-east, and covered with a rich profusion of second growth. The vast wilderness of green being dotted with black islands of burnt pine, with a few detached living remnants, serving by their surprising dimensions to tell of the splondid forest which must have once covered the country.

Height of Brulé Hill above the sea.

92. The soil, wherever examined, consisted of a red sandy loam, covered with a thin coating of vegetable mound. Occasionally bare rock exposures protruded, and granitic boulders

were numerous. The uniform size of the second growth timber on this Brulé Hill, seemed to prove that the great fire which devastated this region may have occurred about thirty years since. The hill round which the portage path winds is considerably higher than any observed range on the height of land, and its summit, from which a view of the surrounding country was obtained, is probably about 100 feet above the height of Land Lake, or 1585 feet above the ocean level; McKay's mountain having an elevation of 1,600 feet above the same level.

Importance of the region about Mille Lacs, in an agricultural point of view.

93. The impression produced by a survey of the solitudes about the western extremity of Mille Lacs and Baril Lake was rather of a favorable character. If in the course of time mineral wealth should be found to exist in profitable distribution about Mille Lacs, there would be no scarcity of arable soil between the low hill ranges of that beautiful little inland sea to supply the wants of a mining population, or in the event of a line of communication between Thunder Bay and Rainy Lake being established, its western shores and those of Baril and Brulé Lakes offer suitable localities for village depots.

French Portage.

94. From Brulé Lake to French Portage, a distance of four miles, the Canal route lies through a series of lovely lakelets, and short rapid streams fringed with cedar and spruce, and behind these fair-sized red pine, birch, aspen, and large spruce, French Portage bearing due west, is 1¾ miles long, and lets us down 99¾ feet into French Portage or Pickerel Lake. The timber on this portage consists of aspen, red pine, and spruce. On the shores of the lake, low hills appear, and are timbered with extensive forest red pine, varied with patches of spruce, aspens, and birch.

Ancient forest near Pickerel Lake.

95. Pickerel Lake, through which in a direction nearly due south-west the canoe route now runs, is a fine sheet of water 13 miles long by two to four broad; its shores consist of low hills

covered with fine forest pine, with spruce, aspens, and birch in the valleys. On the east side of the Lake, the remains of an ancient pine forest are often visible in the forms of noble detached trees. These occur about six miles from its head, and here, too, may be occasionally noticed small groups of the same trees rising far above the comparatively young growth which now surrounds them. The half-burned standing trunks of huge dimensions, show the extent and character of the earlier forest, and the cause which destroyed their companions. White pine in numbers still remain at the foot of the Lake, and were seen at the portage, which is called Portage du Pin, also Portage des Morts. The first name is evidently derived from the prevalence of large red and white pine here; its length is twenty-six chains, and its descent is 6.9 feet, leading into Jack Fish or Doré Lake, a small sheet of water about a mile across, but extending much further in a north-westerly direction.

Fine Vegetation of Portage des Pins.

96. Among the trees observed here, remarkable for their size, cedar, ash, white and red pine, with birch of two kinds, may be enumerated. The cedar is far superior to any before seen. A clay sub-soil is found in the valley of a small river running near the portage path, and the upturned roots of trees on the hill-side showed fine washed white sand upon which a sandy loam was imposed. The foot of Doré Lake brings us to the Portage des Deux Rivières, which lets us down into Sturgeon Lake 117.21 feet, in a length of 32 chains.

Scenery and country about Sturgeon Lake.

97. The whole country seems to sink with the French Portage and the Deux Rivières Portage. The hills about Sturgeon Lake at its upper end are not above 100 feet high, and if the valleys and lakes were filled up between the tract of country south-west of French Portage, it would be nearly a level plain, with a slight south-westerly descent. In Sturgeon River, leading to the Lake of that name, we meet with the first marshy place since leaving the mouth of the Savanne River. The canoes,

here, were forced through a profusion of aquatic plants, among which the beautiful white water lily, with its golden-hued companion, frequently occurred. Willows, small aspen and alder, grew on the banks, but no hill or elevated table land was visible from the shallow but tortuous river, choked with aquatic plants, through which we forced our way into the main body of Sturgeon Lake. Once on the open lake, hills about 200 feet high rose into view at some distance on the eastern side. The bushy tops of what appeared to be a grove of elms, were seen near the head of this large and beautiful sheet of water; again wide tracts of burnt land attract attention, with a few white pines, remains of a forest long since destroyed. The northeastern termini of hill ranges slope to the water edge, and, when bare, are found to be evenly smoothed and ground down. Everywhere on the shores of the first large expansion of the lake, remains of an ancient forest lay black and branchless, or still flourished green and erect amidst a vigorous undergrowth of spruce and aspen.

Lac la Croix.

98. Sturgeon Lake and River, or rather a succession of Lakes and Rivers bearing the above names, extend for 36 miles from the Portage des Deux Rivières to Island Portage, which leads into Pine Lake, a small sheet of water connected by means of a broad river about 3½ miles long, with the great Nequanquon Lake, or Lac la Croix.

99. Nine miles from its head, Sturgeon Lake was found to have 45 feet depth of water, with a mud bottom. The temperature of the Lake was 68° at 6 P. M.; the pines and balsams growing near the shore were seen to be scraped or barked for about a foot near the ground by Indians, for the purpose of procuring gum or resin.

Beauty of Sturgeon Lake.

100. No Lake yet seen on the route can bear comparison for picturesque scenery with Sturgeon Lake. The numerous deep bays, backed by high-wooded hills or rocks, rugged or

smooth, according to their aspects, its sudden contraction into a river breadth for a few yards between large islands and the equally abrupt breaking out into open stretches of water, offered a constant and most pleasing variety of scene. The high jutting points of granite rock, which here and there confine the channel, offer rare opportunities for beholding on one side an intricate maze of island scenery, and on the other an open expanse of lake, with deep and gloomy bays, stretching seemingly into the dark forest as far as the eye can reach.

Cascades of Sturgeon River.

101. The fourth large expanse of Sturgeon Lake is limited by low, densely-wooded shores, with high hill ranges in the far distance. The first cascades, with a fall of 4½ feet, occur at the foot of this last expansion; these are quickly followed by the second falls of 6¼ feet descent, then occurs a narrower reach of river for three miles, which is terminated by the third rapids of 2½ feet fall, leading to another expanse with a general direction nearly due west; white cedar now becomes common, and the fourth and fifth rapids occur within four miles of one another, and are followed by Island Portage two miles further on.

Island Portage.

102. Island Portage lets us down ten feet, and involved a portage of fifty yards. Crossing the small Pine Lake, the river now assumes a course nearly due west, and, within a distance of four miles, brings us to a north-eastern arm of Lac la Croix. The canoe route passes near the north shore of this extensive and beautiful lake. High precipitous rock exposures begin to show themselves, often clothed with dense groves of pine rising above the mass of light green aspen foliage which prevails. Although Lac la Croix is 14 or 15 miles long, yet our traverse did not exceed eight, as we entered the Nameaukan river which issues from the north-western coast, and takes a circuitous north-westerly direction, bringing us to the Snake Portage, where the river descends by a beautiful cascade 12.14 feet, involving a portage of 110 yards. Rapids and falls now follow in quick succession on Nameaukan River, which has a circuitous course of about 18 miles before it debouches into Nameaukan Lake.

Following Snake Lake, are Crow Portage with 9.88 feet fall: Grand Falls Portage, 16 feet; and the great and dangerous Nameaukan Rapids letting the river down by steps, perhaps also 16 feet. The shores of Nameaukan River show the Bankean pine in abundance with aspen, and at its mouth growing elm.

Nameaukan Lake.—Rainy Lake.

103. The traverse across Nameaukan Lake is six and half miles in length, the lake itself extending for more than double that distance, in a due west direction. At the extremity of the traverse is the new portage, where the descent is eight and half feet. A circuitous narrow river, without perceptible current, passing through a reedy expanse, fringed with low willow for about three miles. The canoe route then takes a winding course, whose general direction is nearly due north, for a distance of two and half miles, when turning due westward we suddenly arrive at the open and beautiful but undescribably barren and desolate region of Rainy Lake.

CHAPTER V.

RAINY LAKE TO THE MOUTH OF RAINY RIVER.

Rainy Lake, surveyed in 1826, 104 — Description of Rainy Lake, 105 — Shores low and sterile, 106 — Height above the Sea, 107 — Temperature of, 108 — Period of freezing and thawing, 109 — Entrance into Rainy River, 110 — Description of Rainy River, 111 — Farming and Gardening operations at Fort Francis, 112 — Depth of Snow, 112 — Lac la Pluie Indians, 113 — Swamp in the rear of Rainy River, 114 — Area of available land, 114 — Rich vegetation of Rainy River, 116 — Extreme beauty of Rainy River, 117 — Soil reposes on clay, 117 — Indian encampments, 117 — Heights of the Banks, 118 — Height of the water, 119 — Rapids of Rainy River, 120 — Water communication between Rainy Lake and the extremity of the Lake of the Woods, 120 — Underground houses, 121 — Indian Lodges, 122 — Character of the Valley of Rainy River, 123 — Character of the Valley near the Lake of the Woods, 124.

Rainy Lake surveyed in 1826.

104. In 1826 a Map of Rainy Lake, as part of the survey under the seventh article of the treaty of Ghent between Great

Britain and the United States, was constructed by David Thompson, Astronomer and Surveyor. Everything relating to its correct delineation and topography was, doubtless, effected by the Commissioners; and that portion of the map accompanying this Report, which includes Rainy Lake, Rainy River, and the Lake of the Woods, is reduced from an authorized copy of those parts of the survey. Dr. Bigsby, who accompanied the Surveyor, as Geologist, communicates the chief facts in the following enumeration of the Geographical position, &c., of Rainy Lake, in the Quarterly Journal of the Geological Society for May, 1854 (1).

Description of Rainy Lake.

105. Rainy Lake, or Lake La Pluie, as it is more frequently called by the voyageurs, is 225 miles west of Lake Superior, and eighty-five south-east of the Lake of the Woods. It is fifty miles long by thirty-eight and half broad, and is 294 round by canoe route. Its form is that of three equal troughs, the main one running in an east and west direction, the other two northerly from it. It is through the main trough that the canoe route lies from the mouth of Nameaukan River, in latitude 48°30 N., longitude 92°40 W. to the source of Rainy River, thirty-eight miles distant, in a direction a few degrees to the north of west.

Shores of Rainy Lake sterile and rocky; Timber poor.

106. The shores of Rainy Lake are generally low, and often consist of naked shapeless masses of rock, with marshy intervals, or they rise in ridges which become hills 300—500 feet high, half a mile to four miles from the lake. The timber seems to be very small and thin in the marshes, and on the islands, which exceed five hundred in number, the largest growth were observed. On the whole, the general aspect of the shores of Rainy Lake is very forbidding, and furnishes almost everywhere, on the ridges and hill flanks, a picture of a hopeless sterility and desolate waste. Dr. Bigsby says that there is but

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(1) On the Geology of Rainy Lake, South Hudson's Bay. By Dr. J. J. Bigsby F. G, S., &c.

little loose debris about Rainy Lake, the earth or gravel banks being few, and seldom exceed a few feet in thickness. Whenever this land rises, for the most part bleached and naked rocks occur for many square miles together.

Height of Rainy Lake above the Sea.

107. Colonel Lefroy made Rainy Lake 1,160 feet above the sea, by barometrical measurement. Its height deduced from the levels taken at the portages, and the estimated rise and fall in the current of the rivers along the line of route, was 1,035 feet. (Mr. Dawson). In this estimate the level of Lake Superior is taken at six hundred feet above the ocean. Major Long found it to be 1,200 feet above the same level. The water of the lake is clear, but warm during the summer months; its depth is generally small. The following table shows the temperature six inches below the surface, during our traverse on the 19th August.

Temperature of Rainy Lake.

108. Temperature of Rainy Lake:

6 A. M.	65.5	11½ A. M.	69.5
7 A. M.	65.5	1 P. M.	70.5
8 A. M.	65.5	3 P. M.	69.5
10 A. M.	65.25	5 P. M.	66.0

A sudden squall, at 3 P. M., rose the waves of the lake with remarkable rapidity into a very boisterous swell, which subsided as rapidly when the wind fell.

Period of freezing and thawing of Rainy Lake.

109. Rainy Lake freezes about the 1st December, and is open about the 1st of May; as is usually the case where large rivers issue from spacious lakes, the discharging stream is not frozen for a number of miles from its source. The warm waters coming from beneath a shelter of ice in their capacious feeding lak retain their heat so as to enable them to resist the cold of thes regions for many miles below the Great Falls.

Entrance of Rainy River, a new country.

110. At the entrance of Rainy River on the evening of August 19, the delightful odour of the balsam poplar, (*populus balsamifera*) loaded the air, and seemed to welcome our arrival in a region differing altogether from those through which we had lately passed. Where Rainy River issues from Rainy Lake, it is a broad and rapid stream, with low alluvial banks, clothed with a rich second growth. The forest with which they were once covered had long since been stripped of its ornaments by the occupants of the old North West, and the present Hudson's Bay Company Fort.

Description of Rainy River.—Affluents of Rainy River.

111. The general course of Rainy River is a few degrees to the north of west, for a distance of 80 miles, by the windings of the river, and in an air line 60 miles. The rapids at its source offer no impediment to skilful navigation, nor do the whirlpools which usually accompany the passage of such a large body of water, in consequence of their being distributed over a wide area. Two miles below the source, Fort Francis is situated on a high bank, just below the Great Falls. These magnificent cascades let the river down 22.88 feet, and at their fort is a famous fishing ground, from which the Lac La Pluie Indians obtain an abundant supply of their staple food. Three miles from Fort Francis, the river takes a sudden southerly bend, which it maintains for a distance of four miles; it then again assumes a course due west for about 16 miles, and receives the Pekan, or Little Fork, the Missatchanbe, or Big Fork, and the Kakmaskatawagan Rivers, on the south or United States side; the course then turns abruptly due north, and continues for a distance of six and a half miles, when it again resumes a westerly direction for 18 miles, its otherwise gentle and uniform current is here broken by the Manitou Rapids and Long Rapids, which let the river down about two and a half feet, and three feet respectively; six miles from the long rapids a short northerly bend again occurs, after which the river, with slight meanderings, pursues

a north-west by west direction, until it debouches into the Lake of the Woods. In this part of its course, it receives, on the British side, small sluggish streams, known by the names of Kiskarko, Kahlawakalk, and Kawawakissiniek streams, and from the territory of the United States, the Muttontine, the Wishahkepekas, and Kapowenekenow Rivers. Its affluents, on the British side, are insignificant outlets to the swamps which occupy the region north of Rainy River valley; but some of those on the United States side are of important dimensions.

Farming and gardening operations at Fort Francis—Depth of snow.

112. Fort Francis, two miles from the source of Rainy River, is situated on the right bank, in lat. 48° 35, and longitude 93° 40. Mr. Pether, the gentleman then in charge, stated that the river never freezes between the falls and the Little Fork, a distance of twelve miles, nor between the falls and its source in Rainy Lake. Wheat is sown at this establishment of the Honorable Hudson's Bay Company, from the 20th to the 23rd of May; it ripens about 1st September. Potatoes, turnips, carrots, and indeed all common culinary vegetables succeed well. Potatoes are dug in the first week of October, and barley is ripe by the middle of August. Snow falls here to the depth of four feet.

Lac La Pluie Indians.

113. The great enemies to extended cultivation are the Lac La Pluie Indians. They are not only numerous, but very independent; and although diminishing in numbers, they sometimes hold near Fort Francis their grand medicine ceremonies, at which five and six hundred individuals sometimes assemble. The number of Indians visiting this fort for the purpose of trade, reaches 1,500. They do not scruple to jump over the fences, and run through the ground crops, if their ball in the game of ——— is driven in that direction.

Swamps in the rear of the valley of Rainy River—Area of available land.

114. In the immediate neighborhood of Fort Francis, the swamp or morass bounding the valley of Rainy River on the

right bank, is about half a mile in its rear. This swamp, which extends from Rainy Lake to the Lake of the Woods, is described by Mr. Pether, and the Indians who were questioned about it, as consisting of a springy, moveable surface, overlying a vast deposit of peat, through which a pole might frequently be pushed to the depth of thirty feet, without reaching the bottom. The surface sustains low bushes, with here and there Islands of small pine. Its borders approach and recede from Rainy River with the windings of that stream; the breadth of the dry wooded and fertile valley varying from half a mile in the rear of Fort Francis, to ten or twelve miles in the direction of the Lake of the Woods. The average breadth of superior land, for a distance of seventy miles might perhaps, with propriety, be assumed to be not less than six miles, giving an area of available soil of high fertility, exceeding two hundred and sixty thousand acres; and there can be little doubt, that with the progress of clearing, much that is now included in the area occupied by swamp, would without difficulty or expense be retained.

115. In describing the general aspects of the banks and valley of Rainy River, it will be advantageous to sketch with considerable minuteness, the features of the soil and vegetation at the different stopping places, where very excellent opportunities were offered for acquiring information on these particulars, and in this description as well as in delineations of other localities in the valley of this beautiful river, I prefer to embody in this Report the notes made at the time, in preference to a general sketch of the whole.

Rich Vegetation of Rainy River.—Elm three feet in diameter.

116. The ground around us at our camp, 12 miles below Fort Francis, is covered with the richest profusion of rose bushes, woodbine, convolvulus in bloom, Jerusalem artichoke (helianthus) just beginning to flower, and vetches of the largest dimensions. Fringing this open interval of perhaps 280 acres in extent, are elms, balsams, poplar, ash and oak. One elm tree measured three feet in diameter, or nine feet eight inches in cir-

cumference; and there is no exaggeration in saying that our temporary camping place is like a rich overgrown and long neglected garden. The golden rod is showing its rich hue in all directions, and gives a distinct yellow tint to an open grassy area on the opposite side of the river.

Extreme beauty of Rainy River.—Soil on Clay.—Lodge poles on Indian Encampment.

117. Similar intervals to the one on which we are now encamped have been noticed occasionally, and hitherto the banks have maintained an average altitude of about 40 feet, bearing a fine growth of the trees before enumerated. No part of the country through which we have passed from Lake Superior northwards can bear comparison with the rich banks of Rainy River thus far. The river has preserved a very uniform breadth, varying only from about 200 to 300 yards. The soil is a sandy loam at the surface, much mixed with vegetable matter. Occasionally, where the bank has recently fallen away, the clay is seen stratified in layers of about two inches in thickness, following in all respects the contour of what seems to be unstratified drift clay below. Basswood is not uncommon, and sturdy oaks, whose trunks are from eighteen inches to two feet in diameter, are seen in open groves with luxuriant grasses and climbing plants growing beneath them. The lodge poles of an Indian camp of former seasons are covered with convolvulus in bloom, and the honeysuckle is twining its long and tenacious stems around the nearest support, living or dead.

Height of Banks.

118. The banks of the river maintain for twenty miles an altitude, varying from fifteen to sixty feet. Occasionally, the banks show the abrupt boundaries of two plateaux, the lower boundary having the form of a sloping bank or an abrupt cliff from fifteen to thirty feet in altitude; on the river the upper plateau rising gradually or abruptly from fifteen to twenty feet higher, according to its position with reference to the river. There is every appearance in places of fire having destroyed a

former larger growth of trees than those which now occupy these areas.

Height of the water at this season of the year very unusual.

119. The extraordinary height of the water at this season of the year is seen by the lodge poles of former Indian encampments at the foot of the bank. They are under water to the depth of one and even two feet. The river does not appear to rise high in the spring, as the trees fringing the banks to the water's edge show no action of ice. The difference between the highest and the lowest water levels may be seven feet, and no record of recent higher levels meet the eye.

Rapids of Rainy Lake.—Length of water communication from Rainy Lake to Lake of the Woods.

120. The Rapids of Rainy River let us down about five and a half feet, and appear to be caused by a belt of rock crossing the river at nearly right angles to its course. On the American side the hill range has an altitude of about eighty feet. On the Canadian side it is much lower, and appears rapidly to subside in gentle undulations. The Rapids of Rainy River, two in number, are capable of being ascended by a small steamer of good power without difficulty, and cannot be considered as presenting an obstacle to the navigation of this important stream as long as the water maintains its present altitude, which is about three feet higher than is usual at this season of the year, but often exceeded in the spring and fall. Mr. Dawson informs me that two locks of ten feet lift, with one guard lock, would overcome the falls at the mouth of the river, and thus form a splendid water communication between the head of Rainy Lake and Rat Portage, Lake of the Woods, by the north-west coast, a distance of 190 miles, or between the head of Rainy Lake and the north-west point of the Lake of the Woods, a distance of one hundred and seventy miles. High clay banks are exposed above and below the Rapids, and some hundred acres here are very scantily timbered with second growth. Ascending the bank two miles below the rapids, I was much surprised at the number of birds

of different kinds chirruping and singing in the light and warmth of a bright morning sun. I heard more birds in ten minutes here than during the whole journey from the Kakabeka Falls on the Kaministiquia.

Tumuli or underground houses on Rainy River.—The remarkable luxuriance of Vegetation.

121. At the second rapids an extensive area destitute of trees presents a very beautiful prairie appearance. Here we landed to examine two immense mounds which appeared to be tumuli. We forced our way to them through a dense growth of grasses, nettles, and Jerusalem artichokes, twisted together by wild convolvulus. On our way to the mounds we passed through a neglected Indian garden, and near it observed the lodge poles of an extensive encampment. The garden was partially fenced, and contained a patch of Jerusalem artichokes, six and seven feet high in the stalk and just beginning to show their flowers. The wild oat attained an astonishing size, and all the vegetation exhibited the utmost luxuriance. The mound ascended was about forty feet high and one hundred broad at the base. It was composed of a rich black sandy loam, containing a large quantity of vegetable matter. On digging a foot deep no change in the character of the soil was observable. The Indian guide called them underground houses.

Indian lodges.

122. About three hundred yards below the second rapids, twenty-three skeletons of Indian lodges are seen, all clothed with the wild convolvulus, and now serving as records of the love of change which seems to form a leading characteristic in the habits of the barbarous race who possess, without appreciating or enjoying them, the riches of this beautiful and most fertile valley. Limestone fragments and boulders, more or less water worn, with pebbles of the same rock, are found everywhere on the beach, at the foot of the clay or loamy banks.

Character of the Valley of Rainy River.

123. When we landed for dinner to-day, (the 21st August,) I strolled about half a mile back from the river, and Mr. Dawson

went about half a mile farther. We found the vegetation improving fast as we receded from the river. Aspens of very large dimensions, balsam, poplar, basswood, birch, and oak, with some elm, formed the forest. The land rose very gradually, and on enquiry from the Indian how far back the good land stretched before coming to the swamp, he said that here the valley was broadest, and it would take us half a day to reach the swamp, journeying the whole time through land similar to that around us, but with larger trees. The singular topographical knowledge acquired by these Indians, and (as far as we have yet been able to ascertain) the accuracy and fidelity with which they communicate it, assures us of the truth of the Indian statement.

The remaining portion of Rainy River exhibited features similar to those already described.

Character of the Valley near the Lake of the Woods.

124. As we approached the Lake of the Woods the river increased in breadth, and at each bend a third low plateau was in process of formation, often 200 and 300 acres in an area, and elevated above the present high water level from one to three feet. Coarse grasses grew in great abundance upon many of these rich outlying alluvial deposits, and it appeared very probable that in ordinary seasons they would furnish some thousand acres of rich pasture land, as the grasses they sustain are like those which on the Kaministiquia, the settlers cut for their winter supply of fodder for cattle. Near the mouth of the river the tall tops of a few red and white pine are seen, which rise far above the aspens occupying the lower plateau, while a vast reedy expanse, probably in ordinary seasons available for grazing purposes, marks the junction of Rainy River with the Lake of the Woods.

CHAPTER VI.

LAKE OF THE WOODS AND THE WINIPEG RIVER.

Dimensions and Divisions of the Lake of the Woods, 125 — Distance of the North West corner from Red River, 125 — Scenery, 126 — Effects of refraction, 127 — Profuse confervoid growth, 128 — Depth of water, 128 — Extraordinary temperature of the Lake, due to the "Weed," 129 — Grasshoppers seen, 129 — Fishing Ground 120 feet deep, 129 — Ice five feet thick forms, 129 — Refraction, 131 — Grasshoppers, 131 — Gale on the Lake, 132 — Garden Island, Indian Corn cultivated; Potatoes, Pumpkins, Squashes; Senna Cherry; Passenger Pigeon; Hosts of Grasshoppers; Ravages of Grasshoppers, noise of the jaws; Indians indifferent to them, 134 — Shoal Lake, 135 — Distance of Shoal Lake from Red River, 136 — Length of a Degree, 137 — Island Scenery, 138 — Channels of the Winipeg, 139 — Magnificence of the Cascades, 140 — Character of the River, 141 — Rat Portage, 141 — View from a hill, 142 — Character of the country of the Upper Winipeg, 142 — Islington Mission, 143 — Cultivable areas on the Winipeg, 143, 144 — Wild Rice Grounds, 145 — Game, 145 — The Pennawa River, 146 — Birds in the rice grounds, 146 — Failure of the rice, 147 — Failure of the fish, 148 — Failure of the rabbits, 149 — Painful consequence of these failures, 149.

Dimensions and divisions of the Lake of the Woods.—Distance from Lake Superior.—North-west corner of the Lake, about 90 miles from Red River in an air line.

125. The Lake of the Woods is about 72 miles in length, and the same in breadth. It is 400 miles round by canal route (1). It is broken up into three distinct lakes by a long promontory, which in periods of high water becomes an island. The southern part is termed the Lake of the Sand Hills; the eastern portion White Fish Lake, and the northern division the Lake of the Woods. White Fish Lake and Lake of the Woods are separated from Sand Hill Lake by the broad promontory before referred to, respecting which little is known. The name of the latter division is derived from the vast numbers of low sand

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(1) See vol. 8 Geological Journals for an account of the Lake of the Woods, by Dr. Bigsby.

hills, which occupy its south-western coast. The distance of the lake of the Woods from Lake Superior, is north-west 340 miles by the Pigeon River route, and 381 by the route from Fort William, followed by the Expedition. The north-west corner of the lake is only about 90 miles from Red River, in an air line. Its elevation above Lake Superior is 377 feet, or 977 feet above the sea. Major Long makes it 1,040 feet above the ocean level, a difference of only 63 feet.

Scenery of the north-west corner beautiful.

126. The scenery among the islands towards the north-west corner of the lake is of the most lovely descriptions, and presents in constantly recurring succession every variety of bare, precipitous rock, abrupt timbered hills, gentle wooded slopes, and open grassy areas. Some of the islands are large and well timbered, others show much devastation by fire, and often a vigorous young undergrowth of a different kind of tree under the blackened trunks of branchless pines.

Effects of refraction.

127. The ordinary course of the canoe route to Red River lies in a north-easterly direction, following the trend of the coast towards Turtle Portage, which leads from the Lake of the Sand Hills to White Fish Lake. In pursuance of our intention to endeavour to pass from the west side of the Lake of the Sand Hills across the country, in as direct a line as possible to Red River, we made a traverse in a north-westerly direction towards the south point of Keating Island, a distance of 16 miles. The surface of the lake was perfectly smooth, reflecting the sun's rays with extraordinary power and brilliancy. As we receded from the shores the low sand dunes to the south-west were refracted into the similitude of distant mountain ranges, and what seemed through a glass to be the rocky coast of the eastern side, into high, precipitous, half wooded cliffs.

Profuse confervoid growth, 35 and 36 feet deep, 4 and 9 miles from land.

128. About 4 miles from land the water became tinged with green, deriving its color from a minute vegetable growth (conferræ), which increased as we progressed, until it gave the appearance to the lake of a vast expanse of dirty green mud. On lifting up a quantity of water in a tin cup, or on looking closely over the side of the canoe, the water was seen to be clear, yet sustaining an infinite quantity of the minute tubular needle shaped organisms, sometimes detached, and sometimes clustered together in the form of small spherical stars, varying from a quarter to half an inch in diameter. Five miles from the shore the lead showed 35 feet of water, and 4 miles further on 36 feet; the green conferræ increased in quantity, and the little aggregations assumed larger dimensions, some of them exceeding one inch in diameter.

Extraordinary Temperature of the Lake of the Woods due to the Weeds.—Grasshoppers seen.

129. The temperature of the lake near the mouth of Rainy River was 67° at half-past 11, A. M. Yet 5 miles from land it was found to be 76° six inches below the surface; an hour afterwards repeated, and careful observations showed the temperature to be 77½°. At 1, P. M. the temperature two feet below the surface was 71°, and at the surface 78°. The depth of water was here 36 feet, and the green conferræ uniformly abundant, so that it was impossible to obtain a table spoonful of liquid free from their minute forms. The presence of this "weed," as the voyageur termed it, was the probable cause of the unusual temperature of the lake. Occasionally grasshoppers were seen resting on the calm glistening surface of the lake, and as we approached Keating Island they increased in number, all of them preserving, with singular uniformity, a direction towards the south-east. The Indians think the "weed" proves destructive to fish. They had seen it on Lake Winipeg.

Fishing ground, 120 feet deep.—Ice 5 feet thick forms on Lake of the Woods.

130. After passing the south point of Keating Island we steered for Garden Island, distant from us about 9 miles. On

the west side of Keating Island the Indian guide pointed out one of their fishing grounds, where he stated the water was 30 fathoms deep, and illustrated the manner in which he arrived at that estimate of the depth by explaining, through the interpreter, the mode of fishing during the winter months, the length of a fathom and the number of these in the lines his people employed to reach with their nets the feeding grounds at that period of the year. He also described the thickness of the ice through which they had to break before they arrived at the water as sometimes exceeding five feet.

Refraction.—Grasshoppers.

131. On approaching and receding from Keating's Island, the effects of refraction were most astonishing, elevating low detached island rocks into huge precipitous promontaries, and giving to a shore, a few feet above the level of the water, the appearance of a high rock bound coast. On nearing a small island about four miles east of Garden or Cornfield Island, the grasshoppers on the surface of the lake became more numerous, the green confervæ was visibly less in quantity, and before we landed to dine it had disappeared altogether, but the grasshoppers were found in great numbers on the shore. The island on which we rested for an hour was about three acres in extent, and sustained some fine old oaks and elms, with a profusion of long grass, not much destroyed by the grasshoppers, which had evidently, as was afterwards inferred, only just arrived there, while those which had been observed scattered over the surface of the lake were probably stragglers from a vast flight of these insects, whose main body we afterwards saw on Garden Island.

Gale on the Lake.

132. During the morning the sky had been cloudless, the air still, and the sun oppressively hot, but in the afternoon a long gentle swell began to rise upon the lake, and when we put off for our destination a wind arose which gradually increased to a gale before we landed in the evening on a low gravelly beach, at the north-west corner of Garden Island.

133. In my report (No. 2) dated 30th August, Islington Mission, Winipeg River, I briefly described the events which occurred during the night of our arrival at this old camping ground of the Lake of the Wood Indians, the conference with a portion of the tribe the following day, and the reasons which determined us to proceed directly to Rat Portage, at the head of the Lake of the Woods, instead of pushing in a direct line towards Red River. The incidents not enumerated in that report have been duly recorded in my journal, and will appear in their proper place.

Garden Island.—Indian Corn, cultivated in hills.—Potatoes, Pumpkins, Squashes, Sand Cherry.—Passenger Pigeon.—Hosts of Grasshoppers.—Ravages of the Grasshoppers.—Noise of their jaws.—Indians quite indifferent to them.

134. Garden Island is about a mile and a half long and a mile broad at its widest part. Its western half is thickly wooded, the greater portion of the eastern half cleared and cultivated. A field containing about 5 acres was planted with Indian corn, then nearly ripe. The corn was cultivated in hills, and kept very free from weeds. Near the centre of the field were several graves, with neatly constructed birch bark coverings. Only one lodge was seen on the Island, and that was placed about 100 yards from the graves. Near the space devoted to Indian corn, were several small patches of potatoes, pumpkins, and squashes. An air of great neatness prevailed over the whole of the cultivated portion of the Island, and in the part still remaining in its natural state, thickets of raspberry, black currant, and gooseberry bushes grew in the intervals between groves of elm, basswood and oak; and on the sandy beach are abundance of the sand cherry, (cerasus pumila,) the favorite Nekaiomena of the Indians. Large flocks of passenger pigeons (columba migratoria) flew backwards and forwards over the island, occasionally alighting in dense masses in the small groves. The shores were covered to the depth of two or three inches with countless millions of grasshoppers, which had been washed there during the gale of the preceding night. The greater number of the grasshoppers were alive, and as the rising sun warmed and invigorated them,

they spread with much regularity over the fields of Indian corn and the potato patches; their progress across the potato patches was like that of an invading army of insects, eating and destroying every living green thing in their way. Before we left the island they had advanced, here and there, some thirty or forty yards from the beach, in a well defined undulating line, leaving behind them nothing but the bare and blackened stalks of the plants over which they had spread themselves and destroyed. By inclining the head, and seeking shelter from the wind under the lea of a bush, the noise of their jaws could be distinctly perceived; and had it been calm, I have no doubt it would have been heard with the greatest ease for a distance of several hundred yards. The Indians had seen the grasshoppers before, but never in such alarming numbers; they appeared, however, quite indifferent to their progress, and quietly amused themselves as they squatted or lay on the ground, by jerking the intruders off their arms and legs with a thin piece of wood, bent by the fingers so as to act as a spring.

Shoal Lake, and the Muskeg or Marsh on the height of land between Red River and the Lake of the Woods.

135. From Garden Island to the north-west corner of the lakes is about twenty miles, but the westerly limits of navigation are not yet found here. It is possible to proceed without difficulty some miles further on, in a due west direction, into a small lake called Shoal Lake. Although no facts derived from personal observations can be here adduced respecting the general feature of Shoal Lake, yet the importance which it derives from its position requires special mention to be made of it. From our Indian guide, permitted to take us to RatPortage by the Chiefs, to whom reference is made in Report No. 2, I learned that Shoal Lake is a reedy expanse of water, eight or ten miles long, connected with the Lake of the Woods by a navigable channel. The north side, and west end of Shoal Lake, were represented to be blended with a vast marsh or muskeg which stretches from near Rat Portage to far south of the Lake of the Woods, and is the source of numerous rivers which flow

from it both eastward and westward. It is this great Muskeg or marsh which forms the barrier between Lake of the Woods and Red River valley, and a separate notice of it will be found further on.

Approximate distance of Shoal Lake from Fort Garry.

136. On part of the south shore of Shoal Lake, and all along that part of the coast of the Lake of the Woods, there is considerable area of dry land, timbered with spruce and small pine. Shoal Lake is only about 87 miles in a direct line from Fort Garry, while by the very dangerous and circuitous Winipeg route, it is at least 320 miles. Shoal Lake is in latitude 49° 23′, and the same meridian line cuts Red River at a spot 25 miles north of the boundary line and ——— distant from it. The importance of the north-west corner of the Lake of the Woods, and possibly also of Shoal Lake at the terminus of a communication by land with Red River, cannot fail to be duly appreciated.

Length of a degree of longitude on different parallels.

137. The following table shews the number of miles contained in a degree of longitude between the 45th and 55th parallels of latitude, from which the distance between the north-west corner of the lake and Red River was computed.

Degree of latitude.	Length in miles.
45	42.43
46	41.68
47	41.00
48	40.15
49	39.36
50	38.57
51	37.73
52	37.00
53	36.18
54	35.26
55	34.41

Island scenery of the north-west part of the Lake of the Woods.—Good timber in the islands.

138. From near the north-west corner of the lake, the route we pursued lay through a labyrinth of islands in a north-east by north direction for a distance of 28 miles. Six miles more nearly due north through scenery of the same description, but of a bolder character brought us to Rat Portage, on one of the numerous mouths of the rocky Winipeg. Much good pine timber was seen on the larger islands, near the northern part of the Lake of the Woods, and if conclusions may be drawn from the accounts which the Indians gave us of their gardens, it is very probable that extensive areas of excellent land exist on the great promontary, and on some of the large islands. They spoke of growing Indian corn to a far greater extent than seen by us on Garden Island.

THE WINIPEG RIVER.

Channels of the Winipeg.—Numerous windings of the Winipeg.

139. Issuing from the Lake of the Woods through several gaps in the northern rim of the lake, the River Winipeg flows through numerous tortuous and distinct channels for many miles of its course in a general north-east direction. Some of the channels unite with the main stream from 10 to 15 miles below Rat Portage, and one pursues nearly a straight course for a distance of 65 miles, and joins the Winipeg below the Barrière Falls. The windings of this immense river are so abrupt and opposite, that an enumeration of the successive general directions may not be without interest.

From Rat Portage it flows :

6 miles north-west,
4 miles a few degrees to the east of north,
24 miles north-west,
8 miles south-west,
24 miles north-west,

8 miles a few degrees north of west,
21 miles south-west by south,
12 miles a few degrees south of west,
22 miles due north,
26 miles north-west.

Magnificence of the cascades on the Winipeg.

140. In its course of 163 miles, it descends by a succession of magnificent cataracts, 349 feet. Some of the falls and rapids present the wildest and most picturesque scenery, displaying every variety of tumultuous cascades, and foaming rapids with treacherous eddies, whitened with foam, and huge swelling waves rising massive and green over hidden rocks. Some of the sketches which accompany this report may succeed in conveying an impression of the beauty and grandeur which belong to the cascades and rapids of the Winipeg; but neither sketch nor language can pourtray the astonishing variety they present under different aspects. In the grey dawn of morning, or rose-colored by the setting sun, or flashing in the brightness of noon-day, or silvered by the soft light of the moon.

Character of the River.—Rat Portage.—Short Indian route.

141. The River frequently expands into large deep lakes, full of islands, bounded by precipitous cliffs, or rounded hills of granite. The Fort in the occupation of the Honorable Hudson's Bay Company at Rat Portage is very prettily situated at one outlet of the Lake of the Woods. It is surrounded with hills about two hundred feet high, and near the fort some white and red pine are standing, amidst a vigorous second growth. The rock about Rat Portage is chloritic slate, which soon gives place to granite, so that no area capable of cultivation was seen until we arrived at Islington Mission. We did not pursue the usual canoe route, but in the hope of overtaking the other members of the expedition, followed an Indian route for some miles, which was said by our guide to be half a day's journey shorter than that by the Great Winipeg.

View from a Hill on the Winipeg.—Character of the country about the Upper Winipeg.

142. At our first camp, after leaving Rat Portage, I ascended a hill about two hundred and fifty feet high, and obtained from its summit a very extensive view of the surrounding country. The broad river, with its numerous deep bays was seen stretching far to the north, and all around dome-shaped hills, similar to the one on which I stood, showed their bare and scantily wooded summits in every direction; generally, they seemed to be thickly covered with small stunted pine, but in the hollows or valleys between them, pine and spruce of large dimensions, with fair sized aspens and birch, flourished abundantly. The pine on the granite hill on which I stood grew in little hollows, or in crevices of the rock. The general surface was either bare, and so smooth and polished as to make walking dangerous, or else thickly covered with cariboo moss and tripe de roche. The aspect of the country was similar in its outline to the region about Mille Lacs, but the vegetation could not be brought into comparison with it. Until we arrived at Islington Mission, the general features of the country maintained an appearance of hopeless sterility, and inhospitable seclusion.

Islington Mission.—Cultivation of Wheat on the Winipeg.—Cultivable area on the Winipeg.

143. Islington Mission, or the White Dog, or Chien Blanc, for by these names it is known to the voyageurs, occupies an area of what seems to be drift clay, extending over two hundred and fifty acres, surrounded by granite hills. The soil of this small oasis is very fertile, and all kinds of farm and garden crops succeed well. Wheat sown of the 20th of May was reaped 26th August in general; it requires but ninety-three days to mature. Potatoes have never been attacked by spring or fall frosts (five years); Indian corn ripens well; spring opens, and vegetation commences about the 10th of May; and winter sets in generally about the 1st of November. These facts are noticed in connection with the small cultivable area at Islington Mission, on account of the occurrence of other avail-

able areas, varying from fifty to three hundred acres in extent, between the Mission and Silver Falls, about eighteen miles from the mouth of the river. From Silver Falls to where the river flows into Lake Winipeg, poor and rocky land is the exception, alluvial and fertile tracts, bearing groves of heavy aspens and other trees, prevailing.

144. The cultivable areas on the river banks are indicated by dotted lines on the Map, as they may possibly acquire importance, for they may be regarded in the light of productive islands in a sterile waste of rock and marsh. From Silver Falls to Fort Alexander alluvial or drift clay prevails, and in the neighbourhood of the fort many thousand acres are susceptible of cultivation.

Wild Rice Grounds on the Winipeg.—Game congregate among the Rice Fields.

145. Below James' Falls the poles of wigwams are numerous, and many Indians were seen at the foot of the different rapids, engaged in fishing. The scarcity of animal life of all kinds was very remarkable. Eagles and fish hawks, ducks and rabbits being the only representatives seen. This scarcely is, however, confined to the autumnal months, as to the time, and to the Great Winipeg River, in respect of area. Some distance from the river there are extensive Rice Grounds (Zizania aquatica) covering many thousand acres, and continuing for many miles on either bank. Here the game congregates, and revelling in the midst of such an abundant supply of nutritious food; vast flocks of ducks, geese, and all kinds of aquatic birds, common in the regions, are to be found. The Indians too, assemble at stated periods, and visit the Rice Grounds, procuring without any difficulty, in favourable seasons, a large supply for winter consumption.

The Penawa River.—Birds in the Rice Grounds of the Penawa.

146. Instead of following the course of the Great Winipeg, after arriving at the Otter Falls, I passed down the Penawa River into Bonnet Lake, thus avoiding the dangerous "Seven Portages," and saving several miles of route. Near the entrance

of the Penawa into Bonnet Lake, the little river winds through an immense marshy area covered with wild rice, and I succeeded in collecting a considerable quantity, as the Indians paddled through it with undiminished speed. There too, were seen vast numbers of different species of duck, and many other kinds of birds, such as herons, pigeons, woodpeckers, cedar birds, jays, &c.

Failure of Rice this year.

147. The Indians lamented the failure of the rice this year, they described the appearance in favourable seasons of the grounds through which we were hurrying, as a vast expanse of waving grain, from which they could soon fill their small canoes, by beating the rice with a stick. The water of the river and marshes have this year been unusally high, so as to check the growth of the rice to an extent which, when coupled with other deficiencies, threaten them with famine during the coming winter.

Failure or scarcity of Fish in the Winipeg this year (1857).

148. The same cause which has originated the partial failure of the wild rice has led to a great scarcity in fish. In general, the Winipeg teems with fish, among which are sturgeon, pike, two kinds of white fish, perch, suckers, &c., affording bountiful supply to the Indians, who hunt and line on or near the lower portion of this majestic river. The extraordinary height of its waters during the present season have so extended the feeding grounds of the fish that they are, with difficulty, caught in sufficient numbers to provide the Indians with their staple food.

Failure or disappearance of the Rabbits on the Winipeg this year (1857).—Probable painful consequences of these failures.

149. The unlooked for short supply of rice and fish have been more severely felt, in consequence of the unaccountable disappearance and death of the rabbits, which are generally found in vast multitudes, in the region of the Lake of the Woods and Winipeg River. During the past spring and

summer, large numbers of rabbits have been found dead in the woods, owing probably to the exhaustion which followed the late severe winter, prolonged this year to an unprecedented length in these regions. With a partial failure in the rice, and great scarcity of fish, and the prospect of a very limited supply of rabbits, the anticipations of the coming winter, on the part of those who care to think of the sufferings of the wretched Indians on the River Winipeg, are gloomy indeed.

CHAPTER VII.

LAKE WINIPEG AND RED RIVER TO THE INDIAN SETTLEMENT.

Altitude of Lake Winipeg above the Sea, 150 — Its length, breadth, and area, 151 — Lake Manitoba and Winnepagoose, 151 — Tributaries received by Lake Winipeg; The Canoe Route, 152 — Mouth of Red River, 153 — Importance of Lake Winipeg, 154 — Agriculture at the mouth of the Winipeg River, 155 — Ancient beach of Lake Winipeg; Boulders on the Cliffs; Virginian Creeper; vast number of wild fowl, 155 — Bar at the mouth of Red River, Netly Creek, 156 — Fertile character of the country about the Indian Missionary Village; Contrast between the Indian Settlers at the Mission and the Savage Tribes of the Lower Winipeg, 157 — Table of distances and heights along the canoe route, 158.

Lake Winipeg's altitude above the Sea.

150. Lake Winipeg is ———— miles in an air line from Lake Superior, and 616.22 by the canal route. The altitude of this extensive sheet of water, above the level of the sea, is six hundred and twenty-eight feet, according to the estimate of this report. Other observers make it a few more or less; others again considerably in excess of what is thought to be a close approximation to its true altitude. A table is given at the close of part first, in which some of these differences, with their authors' names, are enumerated.

The length, breadth, and area.—Tributaries received by Lake Winipeg.

151. Lake Winipeg is two hundred and sixty-four miles long, by an average of thirty-five wide. It certainly contains an area exceeding 9,000 square miles, and is probably one-half as large again as Lake Ontario. Connected with Lake Winipeg by navigable channels are two other large bodies of water, Lakes Manitoba and Winipigoos, being together nearly as long as Lake Winipeg, and having about half its breadth. The water area of these lakes may, with some small connections, equal, if it does not exceed, that of Ontario and Erie combined.

Tributaries received by Lake Winipeg.

152. Among the numerous tributaries received by Lake Winipeg, are Red River, unwatering in part a region which is in some degree tributary to the Mississippi. The Great Winipeg River, 163 miles long, draining the Lake of the Woods region, and its tributaries 300 miles to the east. Numerous rivers coming in from the eastern belt of the granitic rock, which separates the valley of Lake Winipeg from Hudson and James' Bay. On the west side, it receives the noble Saskatchewan, bearing its tribute from the Rocky Mountains, a thousand miles to the west. Red Deer River and Swan River, fall into Winipigoos Lake, besides many other minor streams, which drain the prairies to the west of those magnificent lake expansions.

The Canoe Route through Lake Winipeg—Mouths of River—Hayfields at the Mouth of the River.

153. A glance at the map will show that the Canoe Route merely touches or approaches the south-east coast of Lake Winipeg, in the traverses to the mouth of Red River. From the imperfect observations possible to be made under such circumstances, little or nothing can be said of the character of that small portion of the coast which is seen from the Canoe Route. The mouths of Red River are four in number, and find their connection with Lake Winipeg, through an immense

area of rushes and willows, growing upon land at or below the level of the water of the lake. It is not until a point six or seven miles from the lake is reached, that land, properly so called, is found. Here, during the summer months, large quantities of hay are made by the people of Red River, which is taken away during the winter, spring freshets laying the whole of this tract under water.

Importance of Lake Winipeg—Drains a valley 400,000 square miles in area, and easily accessible.

154. Lake Winipeg, once reached, communication with the interior becomes an easy matter. The numerous rivers which unwater the valley of this great lake, with an area of 400,000 square miles, are most of them canoe, or boat routes, for many hundred miles up their streams. Lake Winipeg is very shallow at its southern extremity, and the marshy shores, past which the Canoe Route to Red River runs, abound with fresh water shells, and are the haunts of innumerable aquatic birds, among which are seen many species of duck, two species of geese, pelicans, cranes, bitterns, and plover.

Agriculture at the Mouth of the Winipeg—Ancient beach of Lake Winipeg—Cliff Boulders of gigantic dimensions—Virginian Creeper—Vast number of Wild Fowl.

155. Fort Alexander is situated within one mile and three-fourths of the lake at the mouth of the Winipeg, and here I saw wheat in process of being harvested on 3rd September, and obtained some new potatoes of great size and excellent quality; and I was informed by the gentleman in charge of the fort that Indian corn succeeded well, in many parts of the south-eastern rim of the lake, and that it was very rarely touched by late spring frosts; it is cultivated by the Indians. The west shore of Traverse Bay is high, and shows an excellent soil, thickly covered with balsam, poplar, aspens and birch. The lodges of Indians are very numerous, as it forms one of their most important fishing grounds. The temperature of the Winipeg at its mouth was 66°.5 at 6 P. M., and that of Traverse Bay, at 6 A. M., on the following day, 64°5. An optical

phenomenon of singular beauty was observed in making the Grand Traverse, nearly due south to the mouth of the Red River. This will be described in its proper place. When we landed to breakfast or dine, opportunities were afforded of examining the precipitous, but unstable cliffs which were occasionally exposed. At a point on the east coast of the Grand Traverse, section No. —— was sketched and roughly measured. It shows one feature of interest, which is common to all the great lakes of the St. Lawrence basin. The summit of the cliff, clothed with an inch or two of sandy loam, shows an ancient lake beach, composed of water-worn boulders, pebbles, and stratified sand, two feet thick. This is underlaid by 16 feet of stratified sand, containing limestone fragments, and primitive boulders, and flanked by a talus of shingle and boulders; among which, bright yellow, cream-colored, and beautifully variegated limestone slabs, are numerous. This talus is the present shore of the lake, and the shingle slabs and boulders have probably been washed out of the unstable cliff. Its breadth may reach 60 feet, and the inclination 3—5 feet from the level of the lake; giving to the ancient beach, at the summit, an elevation of 21 feet above the present level of the waters of the lake. About five miles further south, I ascended a cliff fifty feet high, consisting of stratified sand and marl, in which were imbedded primitive boulders of most gigantic dimensions—some of them measured twelve to fifteen feet through—they were all water-worn, and distributed throughout the cliff. On the surface, walking was exceedingly difficult, on account of their numbers and size. Many of them were covered with the Virginian Creeper (*ampelopsis quinquefolia*). The base of the cliff was well protected by an immense accumulation of these erratics, which had fallen from the loose sand of the cliff. The temperature of the lake, six miles beyond this point, was 64°.5. A heavy squall from the north-west compelled us to approach the shore, when within three miles of the mouth of the Red River: the waves rose with great rapidity, as usual, in large, open, shallow sheets of water, and compelled a hasty retreat among the willows and rushes, where, notwithstanding that we were exposed to the discomfort of the waves washing over our camp during the night, we were compelled to remain in this damp maze of reeds, until the wind and waves subsided. There I had an opportunity of observing the vast number of duck, geese and plover, which congregated amongst the rushes during the night. In the morning, flights swept backwards and forwards close to our camp in constant succession.

Bar at the mouth of Red River.—Netley Creek.

156. Red River enters Lake Winipeg by four distinct channels. Its junction with the lake by the channel, through which we entered, is marked by a bar, in which there is not more than three feet water close to a pit of sand, which was the only piece of land seen amidst the tall reeds extending far to the south, and beyond the point where the river channel unites some three miles from the mouth of the main channel. Land which is dry during the summer months, and at the stage of water in the river on the 5th September, about 2½—4 feet above its level, begins five miles from the mouth of the main channel. Half a mile above this point, Netley Creek comes in from the west, and by means of this small affluent, much of the water during floods from the upper country reaches Lake Winipeg. Large numbers of hay stacks were seen here in September last. An immense area flooded during the spring, producing a very rank profusion of those grasses, which delight in a rich marshy soil.

Fertile character of the country above and a little below the Indian Village.—Contrast between settlers at the Indian Village and Savage Tribes in the Lower Winipeg.

157. A little below the Indian Village, fourteen miles from the mouth of the river, the whole country rises; the banks are about twenty feet high, the timber imposing, and in considerable variety; and all the aspects of a level, fertile country, gradually come into view. The sameness in the general aspect of the banks at this season of the year becomes monotonous, after the wild and varying beauties of the Winipeg.

But the sight of clearings, and the neat white houses of settlers at the Indian Missionary Village, speedily creates another feeling, aroused by such fair comparisons between the humanizing influence of civilization, and the degraded brutal condition of a barbarous heathen race, which quickly follow one another in passing from the Cascades and Rapids of the Winipeg, with half clad savages fishing at the foot; to the even flow of Red River, with Christian men and women, once heathen and wild, living in security on its banks.

TEMPERATURE of the Lakes and Rivers, from the height of land to Lake Winipeg.

Name of Lake or River.	Temperature of Lake or River.	Day.	Hour.
Mille Lacs	69.5	August 13...	4½ P. M.
Do	66.0	" 14...	5.30 A. M.
BarilLake	67.0	" 14...	2½ P. M.
Brulé Lake	68.0	" 15...	"
French Portage Lake	67.5	" 16...	5 A. M.
Sturgeon Lake	68.5	" 16...	5 P. M.
" River	67.5	" 17...	9½ A. M.
Wamakan Lake	67.5	" 18...	"
Rainy Lake	65.5	" 19...	6 A. M.
"	70.5	" 19...	1 P. M.
"	66.0	" 19...	5 P. M.
Rainy River	66.0	" 23...	6 A. M.
"	66.5	" 23...	6 P. M.
Lake of the Woods (1)	67.0	" 24...	10 A. M.
6 inches below surface	76.0	" 24...	11½ A. M.
" "	77.5	" 24...	12½ P. M.
" "	78.0	" 24...	1 P. M.
2 feet below surface	71.0	" 24...	1 P. M.
6 inches below surface	75.5	" 24...	3 P. M.
" "	66.5	" 27...	5 P. M.
" "	65.0	" 23...	6 A. M.
Winipeg River	67.0	" 31...	6 P. M.
"	67.0	Sepr'br 1...	6 P. M.
Pennawa River	70.5	" 3...	1 P. M.
Mouth of Winipeg River	66.5	" 3...	7 P. M.
Lake Winipeg—			
Traverse Bay	64.5	" 4...	"
10 miles from land	64.5	" 4...	"
Red River, 200 yards from mouth, after a heavy gale from North	59.0	" 5...	7 A. M.
Temperature of Wind (2) at Scratching River	75.0	" 23...	5 P. M.

(1) See page for the cause of the high temperature of the Lake of the Woods.

(2) Very deep here.

TABLE shewing the lengths, distances from Lake Superior, heights, elevation above Lake Superior, and the number of the portages on the route.

Names.	Lengths.		Distances from Lake Superior.		Heights	Elevation above Lake Superior.	No. of Portages.	Remarks.
Kaministiquia River.	Mls.	Chs.	Mls.	Chs.	Feet.	Feet.	...	
Mouth	...	...	...	...	......	......	...	
Fort William	0	40	0	40	......	......	...	
Pointe des Meurons	9	40	10	0	4·49	4·49	...	
Rapids and Current	12	0	22	0	30·00	34·49	...	
Décharge de Paresseux	0	14	22	14	5·08	39·57	1	
Rapids and Current	7	4	29	18	16·63	56·20	...	
Mountain Portage	0	62	30	0	119·05	175·25	2	
River	0	20	30	20	......	175·25	...	
Rocky Portage	0	37	30	57	62·65	237·90	3	
River	2	60	33	27	0·50	238·40	...	
Nicolet Portage	0	6	33	43	6·50	244·90	4	
Rapids and Current	1	37	35	0	5·75	250·65	...	
Portage	0	3	35	3	12·62	263·27	5	
River	0	37	35	40	......	263·27	...	
Pot Holes Portage	0	13	35	53	6·90	270·17	6	
River	0	22	35	75	......	270·17	...	
Couteau Portage	0	5	36	0	19·25	289·42	7	
Trois Décharges	0	35	36	35	10·00	299·42	8	
River	1	0	37	35	0·20	299·62	...	
Poplar Décharge	0	5	37	40	3·00	302·62	9	
River	0	40	39	0	0·50	303·12	...	
Décharge	0	9	39	9	3·00	306·12	10	
Rapids and Current	9	51	48	60	35·00	341·12	...	
Portage des Maitres	0	1	48	61	3·00	344·12	11	
River	0	60	49	41	1·00	345·12	...	
Little Dog Portage	0	3	49	44	14·94	360·06	12	
Rapids and Current	2	60	52	24	3·00	363·06	...	
Little Dog Lake	1	20	53	44	......	363·06	...	
Great Dog Portage	1	52	55	16	347·81	710·87	13	
Great Dog Lake	10	60	65	76	......	710·87	...	
Dog River.								
Mouth	...	...	65	76	......	710·87	...	
River	30	0	95	76	3·00	713·87	...	
Barrière Portage	0	1	95	77	3·50	717·37	14	
River	2	20	98	17	0·20	717·57	...	
Jourdain Portage	0	6	98	23	8·60	726·17	15	
River	0	40	98	63	......	726·17	...	
Prairie River.								
Mouth	...	...	98	63	......	725·17	...	
River	3	0	101	63	6·50	727·67	...	
Cold Water Portage	0	6	101	69	0·76	728·43	16	
Cold Water Lake	0	14	102	3	......	728·43	...	
Prairie Portage	2	50	104	53	157·12	885·55	17	
Height of Land Lake	0	18	104	71	......	885·55	...	
Des Millier Portage	0	38	105	29	16·39	869·16	18	
Savanne Lake	1	40	106	69	......	869·16	...	
Great Savanne Portage	1	41	108	30	31·69	837·47	19	
Savanne River.								
Mouth	...	...	108	30	......	837·47	...	
River	13	20	121	50	4·79	832·68	...	
Thousand Lakes	21	60	143	30	......	832·68	...	
Baril Portage	0	17	143	47	1·86	834·54	20	
Baril Lake	8	0	151	47	......	834·54	...	
Brulé Portage	0	21	151	68	47·02	787·52	21	
Upper Brulé Lake	8	0	159	68	1·50	786·02	...	
Semi-Décharge	0	2	159	70	2·50	783·52	22	

Table shewing the lengths and distances from Lake Superior, &c.—(*Continued.*)

Names.	Lengths.		Distance from Lake Superior.		Heights	Elevation above Lake Superior.	No. of Portages.	Remarks.
Savanne River.—(Continued.)	Mls.	Chs.	Mls.	Cs.	Feet.	Feet.		
Lower Brulé Lake	4	20	164	10	1·25	782 27	...	
Great French Portage	1	60	165	70	99·71	682·56	23	
French Portage Lake	1	40	167	30	......	682·56	...	
Pickerel River	2	40	169	70	1·25	681·31	...	
Pickerel Lake	13	0	182	70	......	681·31	...	
Pickerel Portage	0	26	183	16	6·90	674·41	24	
Doré Lake	1	60	184	76	......	674·41	...	
Deux Rivières Portage	0	32	185	28	117 22	557·19	25	
Sturgeon Lake	23	20	208	48	1·00	556·19	...	
Sturgeon River.								
Mouth	......		208	48	......	556·19	...	
Semi-Décharge, 1st Sturgeon Rapids	0	11	208	59	4·51	551·68	26	
River	0	20	208	79	0·25	551·43	...	
Portage, 2nd Sturgeon Rapids	0	3	209	2	6·21	545·22	27	
Rapids and Currents	7	8	216	10	10·00	535·22	...	
Semi-Décharge, Minnis Rapids	0	5	216	15	4·50	530·72	28	
Current	5	0	221	15	1·25	529·47	...	
Island Portage	0	3	221	18	10·06	519·41	29	
River	4	0	225	18	2·00	517·41	...	
Nequawquaw Lake	8	0	233	18	......	517·41	...	
Nameaukan River.								
Mouth	......		233	18	......	517·41	...	
Currents	2	0	235	18	5·00	512·41	...	
Rattlesnake Portage	0	5	235	23	12·14	500·27	30	
Current	3	27	238	50	1·75	498·52	...	
Crow Portage	0	8	238	58	9·88	488·64	31	
Rapids and Currents	6	40	245	18	7·00	481·64	...	
Grand Falls Portage	0	6	245	24	16·08	465·56	32	
Current	0	3	248	24	3·00	462·56	...	
Grand Rapids	0	40	248	64	16·00	446·56	...	
River	2	40	251	24	2·00	444·56	...	
Lake Nameaukan	6	40	257	64	......	444·56	...	
Nu Portage	0	6	257	70	8·55	436·01	33	
Lakelet	0	20	258	16	......	436·01	...	
Portage	0	11	258	27	0·21	435·80	34	
River	5	0	263	27	0·50	435·30	...	
Rainy Lake	38	0	301	27	......	435·30	...	
Rainy River.								
Mouth	......		301	27	......	435·30	...	
Rapids	0	40	301	67	3·00	432·30	...	
Currents	1	40	303	27	0·50	431·80	...	
Fort Francis Portage	0	8	303	35	22·88	408·92	35	
River	32	60	336	15	10·00	398·92	...	
Manitou Rapids	0	15	336	30	2·50	396·42	...	
River	6	40	342	70	3·50	392·92	...	
Long Rapids	0	20	343	10	3·00	389·92	...	
River	38	0	381	10	12·10	377·82	...	
Lake of the Woods	72	0	453	10	......	377·82	...	
Winipeg River.								
Rat Portage	0	13	453	23	15·98	361·84	36	
River	8	7	461	30	1·00	360·84	...	
Les Dalles Rapids	0	20	461	50	3·00	357·84	...	
River	25	0	486	50	2·00	355·84	...	
Grand Décharge	0	20	486	70	6·00	349·84	37	
River	2	0	488	70	2·25	347·59	...	
Terre Jeune Portage	0	5	488	75	22·02	325·57	38	
River	0	55	489	50	0·75	324·82	...	

TABLE shewing the lengths and distances from Lake Superior, &c.—(*Continued.*)

Names.	Lengths.		Distance from Lake Superior.		Heights.	Elevation above Lake Superior.	No. of Portages.	Remarks.
Winipeg River.—(Continued.)	Mls.	Chs.	Mls.	Chs.	Feet.	Feet.		
Charette Décharge	0	2	489	52	3·50	321·32	39	
River	0	78	490	50	1·00	320·32	...	
Terre Blauche Portage	0	10	490	60	8·24	312·08	40	
River	0	28	491	8	0·15	311·93	...	
Cave Rapids	0	2	491	10	2·50	309·43	...	
River	19	0	510	10	4·50	304·93	...	
De l'Isle Portage	0	2	510	12	3·40	301·53	41	
River	22	78	533	10	4·00	297·53	...	
Chute à Jacquet Portage	0	3	533	13	12·97	284·56	42	
River	9	57	542	70	1·60	282·96	...	
Point des Bois Portage	0	13	543	3	10·50	272·46	43	
River	0	7	543	10	0·25	272·21	...	
Point aux Chiens Portage	0	5	543	15	19·92	252·29	44	
River	0	75	544	10	1·00	251·29	...	
Roche Brulé Portage	0	3	544	13	7·80	243·49	45	
River	4	37	548	50	1·75	241·74	...	
Slave Falls Portage	0	30	549	0	19·80	221·94	46	
River	6	10	555	10	2·25	219·69	...	
Barrier Falls Portage	0	2	555	12	4·97	214·72	47	
River	4	78	560	10	2·00	212·72	...	
Otter Falls	0	1	560	11	3·00	209·72	...	
Current	5	79	566	10	8·00	201·72	...	
The Seven Portages. 1st	0	4	566	14	10·23	191·49	48	
Current	0	16	566	30	1·00	190·49	...	
2nd	0	3	566	33	8·47	182·02	49	
Current	0	37	566	70	2·00	180·02	...	
3rd	0	5	566	75	5·60	174·42	50	
Current	1	15	568	10	2·25	172·17	...	
4th	0	3	568	13	7·68	164·49	51	
Current	0	37	568	50	1·25	163·24	...	
5th	0	2	568	52	2·90	160·34	52	
Current	0	38	569	10	2·00	158·34	...	
6th	0	3	569	13	8·13	150·21	53	
Current	0	7	569	20	1·25	148·96	...	
7th	0	3	569	23	4·75	144·21	54	
River	11	37	580	60	3·00	144·21	...	
Bonnet Lake	4	40	585	20	......	144·21	...	
Anse de Bonnet Portage	0	1	585	21	7·31	133·90	55	
River	0	59	586	0	2·00	131·90	...	
Cap de Bonnet Portage	0	4	586	4	5·00	126·90	56	
River	3	16	589	20	3·25	123·65	...	
Big Bonnet Portage	0	50	589	70	34·23	89·42	57	
River	0	30	590	20	1·00	88·42	...	
Petit Roche Portage	0	13	590	33	8·25	80·17	58	
River	3	27	593	60	3·50	76·67	...	
White Mud Portage	0	15	593	75	13·05	63·62	59	
River	3	45	597	40	1·80	61·82	...	
Silver Falls Portage. 1st	0	7	597	47	6·06	55·76	60	
River	0	3	597	50	0·25	55·51	...	
2nd	0	13	597	63	15·59	39·95	61	
River	5	47	603	30	1·40	38·55	...	
Pine Portage	0	12	603	42	8·03	30·20	62	
River	11	0	614	42	2·00	28·20	...	
Fort Alexander	0	0	614	42	......	28·20	...	
Mouth of River	1	60	616	22	......	28·20	...	
Winipeg Lake	41	0	657	22	......	28·20	...	
Mouth of Red River	...	...	...	...	......	......	...	
Indian Mission	...	...	...	...	......	......	...	
Stone Fort	...	...	...	...	......	......	...	
Fort Garry	...	...	...	...	......	......	...	

PART II.

THE VALLEY OF RED RIVER NORTH OF THE FORTY-NINTH PARALLEL OF LATITUDE. TOPOGRAPHICAL SKETCH.

The Red River of the North.—General description of Red River within the territory of the United States, 160 — Tributaries of Red River, 160 — Length of Red River within the United States, 160.

Physical Features of Red River from the Indian Missionary Village to the 49th Parallel.—Sugar Point; Limestone exposures, 161 — Maple, 162 — Banks of the River, 162 — Physical features of Red River; Grand Rapids; Bars of Mud; Forest Timber; River Banks; extent and richness of Prairies, 163.

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The west banks of Red River.—The King's Road; aspen woods; scene south of Water Mill Creek; Woods of the Assiniboine; rural beauty of the scenery, 169 — Extraordinary aspect of the country; aspect at sun rise, at noonday, at sunset, by moonlight, at night, 170 — Immensity of the prairies of Red River, 171.

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160. The Red River of the North rises in Ottertail Lake, Minnesota territory.* The north-east end of Ottertail Lake is in lat. 46° 24' 1". The general course of the river is south-west, through an attractive undulating country, until it makes its great bend to the north, which lies in lat. 46° 9'. It then meanders through a boundless prairie, destitute of timber, which gradually declines in elevation until it forms a vast level plain, elevated above the water only about one and a half to two feet, at its ordinary stage in June. The distance of this great bend is 110 miles from the source of the river in Ottertail Lake. The vast low prairie through which it flows is level as a floor. Its course through the flat country, in which it has succeeded in cutting a channel, is very tortuous. In latitude 46° 23' 30" a belt of timber sets in, and continues with some interruption along the banks of the river on one side or another to Pembina. To latitude 46° 23' the waters continue comparatively clear; beyond this they become more and more turbid. In latitude 46° 41' 12" the level of the prairie above the river is 30 feet, and is probably due to the gradual cutting away of the river channel in soft clay. Red River receives few tributaries south of the 49th parallel: these are in order, the Psihu river, eight or ten yards wide at its

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PHYSICAL FEATURES OF RED RIVER FROM THE INDIAN MISSIONARY VILLAGE TO 49TH PARALLEL.

Sugar Point.—Limestone exposures.—Limestone exposed.

161. Three miles below the Honorable Hudson Bay Company's Lower or Stone Fort, and at about four from the Indian Missionary Village, a remarkable bend in the course of the stream gives rise to a sharp projection of the level plateau of the prairie. Sugar Point, as it is termed from the groves of maple which cover it, is probably preserved from the abrading action of the stream by numerous fragments of limestone which lie at the bottom of the river bank and continually increase in number and size in its ascending course, as far as the exposed strata of limestone, at and above the lower fort, where their place is supplied *in part* by exposures of the parent rock.

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ral level of the prairie banks. An instance of this kind occurs at Dr. Burn's house, and the section marked No. 1 shows the relation of the river to the lower plateau and the Great Prairie or Rain Plateau above it. Occasionally sand, mud, and gravel bars are formed at numerous sharp turns in the general course of the stream, similar to those which may be observed upon the chart at Point Douglas, also above Fort Garry, near la Rivière Sal, near Scratching Creek, &c. These projecting bars or points are often covered with fragments of limestone, primitive boulders, and vast numbers of large fresh water shells (Specimen No. .) The current round them is rapid, and they present a formidable obstacle to the navigation of the river by means of steamers exceeding 100 to 120 feet in length. Often, too, on one side or the other, and sometimes on both sides, a narrow belt of heavy forest timber closes upon the river, and seems suddenly to narrow and darken its abrupt windings. The most uniform character, however, and one which is more frequently found on the west side, is a clean and steep line of bank about 30 feet in altitude, perfectly level to the eye, and forming the boundary of a vast ocean of prairie, whose horizon or intermediate surface is rarely broken by small islands of poplar or willow, and whose long, rank, and luxuriant grasses, show everywhere a uniform distribution, and indicate the character of the soil they cover so profusely. A subsequent closer inspection of the soil never failed to establish its fertility and abundance, as well as its distribution over areas as far as the eye can reach, both eastward and westward, on the banks of this remarkable river.

164. Such are the general physical features of Red River within British territory. I now propose to enumerate the objects which arrest the attention, first in passing up the river to the 49th parallel, and second in travelling along the road on its western bank. This division is necessary, since any attempt to describe the topography of Red River Valley, from points of view limited to the river level, would be something like an effort to portray the general appearance of a capacious farm yard from views which might be supposed to be obtained from the bottom of its well.

OBJECTS SEEN FROM THE RIVER BETWEEN THE INDIAN SETTLEMENT AND THE 49TH PARALLEL.

Aspect of River between the Indian Village and 49th Parallel.—Timber on Banks. —Limestone at the Stone Fort.—Whirlpool Point.—Limestone seen in massive layers above Big Eddy.—Application of the Lime Stone to Building purposes.—Houses seen on the Banks of the Grand Rapids.—Stone Church.—Mill Creek.—Swamp sustained by the dam across Mill Creek.—A large area, probably exceeding 20,000 acres, never flooded at Red River.

165. The objects which arrest attention in ascending the river between Sugar Point and the Lower or Stone Fort, are limited to precipitous clay banks, fringed with elm, poplar, maple, oak, and ash, all of large growth, but not fair representatives of the forest which once occupied its banks, having been subjected to a culling process for twenty years to supply the necessities of the settlement above. Among the underbrush, the Virginian creeper and occasionally a wild grape, with a profusion of convolvulus twining round hazel, and rose bushes are most conspicuous. At the Stone Fort, massive layers of limestone crop out, which have been extensively quarried, and their application is seen in the walls and bastions of the fort built upon the bank here, about forty feet in altitude, and forming the abrupt termination of the prairie stretching westward, which for some distance sustains a small but dense growth of aspens. At each turn of the river above this point the houses of the inhabitants of Red River Settlement come in sight, and these occupy at short intervals the river bank all the way up to Fort Garry, a distance of 23½ miles by the windings of the river. When nearly two miles above the Stone Fort, we arrive at Whirlpool Point, and immediately above this at the Big Eddy;—these are obstacles to further progress, formidable only in name, and like most other local descriptive titles on this river, must be accepted with the mildest interpretation, and only understood to designate marked differences from the general even flow of the waters of the river; a small brook on which a water mill is situated enters the river at the Big Eddy. A short distance above the same locality (the Big Eddy) limestone is seen in heavy

layers on the west bank, and detached fragments in great abundance protect the base of the cliff, which in no instance, observed from the mouth to the 49th parallel, rises above forty feet from the water level. Some very substantial illustrations of the adaptation of the limestone for building purposes occur here, and particularly at the Grand Rapids, 2¼ miles farther up.—Among them may be mentioned the house of Mr. Gunn, to whom I am much indebted for a valuable register of meteorological observations, made three times a day during 1855–56. The east side of the river is wooded to a depth varying from a few yards to a mile, and generally this feature prevails along the eastern bank to Fort Garry; the timber is similar to that already described. At the Grand Rapids, which even during the low stage of water in September, offer no formidable obstacle to the Company's and freighters' boats carrying four and five tons, an assemblage of well built stone buildings are grouped, which create a very favorable impression of Red River resources and comfort, not unfrequently repeated as we ascend the stream. There we find a very substantial stone church, capable of seating 500 people, and surrounded with a neat stone wall enclosing an extensive burying ground. About 300 yards south of the church, the parsonage house is seen from the river, and a visit to its interior, to be more fully noticed subsequently, proved that every desirable comfort was enjoyed by the kind and hospitable incumbent, Archdeacon Hunter; adjoining the parsonage is the residence of the curate, Mr. Kirby, and next to that a capacious and well built school-house of wood. Four miles above the Grand Rapids, Mill Creek enters the river, having cut its way through the yielding clay substratum of the prairie, to a depth of twenty-five feet, half a mile from its mouth: Here thw ater mill is situated which gives a name to this creek, but which is fed to a great extent by a large but shallow marshy tract called the Big Swamp, occupying some thousand acres, as indicated on the chart; as will be shewn hereafter, it is mainly sustained by the mill dam holding up its waters, and thus preventing them from draining into the River. Mill Creek and its westerly extension into the swamp, form a very important physical feature in the topography of this region ; the slight depression in which it flows, continued through the swamp to Mill Creek, forms the passage of water, during floods, from Red River to Lake Winipeg, whenever the waters accumulate so as to overflow their banks. From this feature, it results that the whole country north of the line drawn on the chart, is dry during the highest floods, and affords an area which probably exceeds 20,000 acres, not liable to the destructive but fortunately rare inundations which have occurred since settlements were first formed here.

Section of the River.

166. For two and a half miles above Mill Creek, the river banks break off abruptly from the prairie level, and, on the east side, are well wooded. The houses of the inhabitants occur at regular intervals upon the immediate banks. At a short distance above the very commodious and comfortable residence of Mrs. Bird, a lower plateau, caused by denudation, commences, and its prairie boundary passes in the rear of Dr. Burns' house, where a portion of the Expedition are residing for the winter, and comes upon the river again before reaching the Presbyterian church. The section marked No. 6 shows the relation of the lower plateau to the general level of the Great Prairie, the relation of the swamp to the river, and also of the ancient beach or ridge of Lake Winipeg to the general level of the country. The following table of heights and distances, taken for this purpose, will exhibit these relations in regular order :

Section across Red River to show the Swamp, River level, Prairie level, and the level of the ancient beach of Lake Winipeg Section.

No. 6. Section across the valley of Red River, from Dr. Burns' house, to the Great Swamp, being on the west side of the river.

Datum : level of Red River, September 18, 1857, or 22.42 below beach mark, or second step of verandah of Dr. Burns' house.

Distance from water mark, 18th September.		Height above water mark, 17th September.	
Water mark 0 feet	……	0 feet.	
66 west	……	18.48	
109	……	11.86	
152	……	20.74	Dr. Burns' house.
233	……	20.06	
830	……	16.52	
1230	……	19.07	
1330	……	25.76	
1853	……	27.52	King's Road.
2431	……	25.04	
2482	……	23.80	Small shallow bed of creek.
2667	……	27.38	Grand Prairie level.
2988	……	27.30	
4212	……	26.31	Commencement.
East.			J. Marsh.
4 miles nearly E. N.		86 feet.	Ancient beach of Lake Winipeg.

No. 9. Section often repeated between the Stone Fort and 49th parallel, across the prairie and channel of Red River, where no second plateau occurs.

West ….	20 35 feet.	Level prairie beyond.
East …..	24.35	" " "

Houses and Windmills.—The Assiniboine.—Meanderings of Red River.—End of Settlement on Red River, within British territory.

167. Above Dr. Burns' house the course of the river is gently winding between the high prairie banks, which generally maintain an altitude of about 30 feet; houses and windmills occur at regular intervals, until the steeple of St. John's Church and the peaked roof of St. John's College, the school house, the Bishop's residence, &c., offer the appearance of a large village, which is again re-produced after the sharp turn at Point Douglas, by the imposing Roman Catholic Church, dedicated to St. Boniface, the spacious nunnery and the parish school, with other buildings on the left, and a group of several

TABLE shewing the lengths and distances from Lake Superior, &c.—(*Continued.*)

Names.	Lengths.		Distance from Lake Superior.		Heights.	Elevation above Lake Superior.	No. of Portages.	Remarks.
Winipeg River.—(Continued.)	Mls.	Chs.	Mls.	Chs.	Feet.	Feet.		
Charette Décharge	0	2	489	52	3·50	321·32	39	
River	0	78	490	50	1·00	320·32	...	
Terre Blanche Portage	0	10	490	60	8·24	312·08	40	
River	0	28	491	8	0·15	311·93	...	
Cave Rapids	0	2	491	10	2·50	309·43	...	
River	19	0	510	10	4·56	304·93	...	
De l'Isle Portage	0	2	510	12	3·40	301·53	41	
River	22	78	533	10	4·00	297·53	...	
Chute à Jacquet Portage	0	3	533	13	12·97	284·56	42	
River	9	57	542	70	1·60	282·96	...	
Point des Bois Portage	0	13	543	3	10·50	272·46	43	
River	0	7	543	10	0·25	272·21	...	
Point aux Chiens Portage	0	5	543	15	19·92	252·29	44	
River	0	75	544	10	1·00	251·29	...	
Roche Brulé Portage	0	3	544	13	7·80	243·49	45	
River	4	37	548	50	1·75	241·74	...	
Slave Falls Portage	0	30	549	0	19·80	221·94	46	
River	6	10	555	10	2·25	219·69	...	
Barrier Falls Portage	0	2	555	12	4·97	214·72	47	
River	4	78	560	10	2·00	212·72	...	
Otter Falls	0	1	560	11	3·00	209·72	...	
Current	5	79	566	10	8·00	201·72	...	
The Seven Portages. { 1st	0	4	566	14	10·23	191·49	48	
Current	0	16	566	30	1·00	190·49	...	
2nd	0	3	566	33	8·47	182·02	49	
Current	0	37	566	70	2·00	180·02	...	
3rd	0	5	566	75	5·60	174·42	50	
Current	1	15	568	10	2·25	172·17	...	
4th	0	3	568	13	7·68	164·49	51	
Current	0	37	568	50	1·25	163·24	...	
5th	0	2	568	52	2·90	160·34	52	
Current	0	38	569	10	2·00	158·34	...	
6th	0	3	569	13	8·13	150·21	53	
Current	0	7	569	20	1·25	148·96	...	
7th	0	3	569	23	4·75	144·21	54	
River	11	37	580	60	3·00	144·21	...	
Bonnet Lake	4	40	585	20	......	144·21	...	
Anse de Bonnet Portage	0	1	585	21	7·31	133·90	55	
River	0	59	586	0	2·00	131·90	...	
Cap de Bonnet Portage	0	4	586	4	5·00	126·90	56	
River	3	16	589	20	3·25	123·65	...	
Big Bonnet Portage	0	50	589	70	34·23	89·42	57	
River	0	30	590	20	1·00	88·42	...	
Petit Roche Portage	0	13	590	33	8·25	80·17	58	
River	3	27	593	60	3·50	76·67	...	
White Mud Portage	0	15	593	75	13·05	63·02	59	
River	3	45	597	40	1·80	61·82	...	
Silver { 1st	0	7	597	47	6·06	55·76	60	
Falls { River	0	3	597	50	0·25	55·51	...	
Portage. { 2nd	0	13	597	63	15·59	39·95	61	
River	5	47	603	30	1·40	38·55	...	
Pine Portage	0	12	603	42	8·03	30·20	62	
River	11	0	614	42	2·00	28·20	...	
Fort Alexander	0	0	614	42	......	28·20	...	
Mouth of River	1	60	616	22	......	28·20	...	
Winipeg Lake	41	0	657	22	......	28·20	...	
Mouth of Red River	...	...	...	...	......	......	...	
Indian Mission	...	...	...	...	......	......	...	
Stone Fort	...	...	...	...	......	......	...	
Fort Garry	...	...	...	...	......	......	...	

PART II.

THE VALLEY OF RED RIVER NORTH OF THE FORTY-NINTH PARALLEL OF LATITUDE. TOPOGRAPHICAL SKETCH.

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Physical features of Red River.—Grand Rapids.—Bars of mud, holding boulders and shells.—Forest Timber.—Character of the River Banks.—Extent and richness of the prairie.

163. First, with reference to physical features, it is merely necessary to imagine a river from 200 to 350 feet broad, with a moderately rapid current, having in the course of ages excavated a winding trench or cut to the depth of from 30 to 40 feet, in tenacious clay, through a nearly level country for a distance exceeding one hundred miles, and the general physical aspect of Red River, within British territory, is reproduced. Here and there local diversities occur which give some appearance of variety. Such are noticed at the Grand Rapids, where the even flow is broken and disturbed by a ledge of limestone, which may occasion a fall of four feet within a mile. A lower plateau has here and there been excavated perhaps ten feet below the gene-

ral level of the prairie banks. An instance of this kind occurs at Dr. Burn's house, and the section marked No. 1 shows the relation of the river to the lower plateau and the Great Prairie or Rain Plateau above it. Occasionally sand, mud, and gravel bars are formed at numerous sharp turns in the general course of the stream, similar to those which may be observed upon the chart at Point Douglas, also above Fort Garry, near la Rivière Sal, near Scratching Creek, &c. These projecting bars or points are often covered with fragments of limestone, primitive boulders, and vast numbers of large fresh water shells (Specimen No. .) The current round them is rapid, and they present a formidable obstacle to the navigation of the river by means of steamers exceeding 100 to 120 feet in length. Often, too, on one side or the other, and sometimes on both sides, a narrow belt of heavy forest timber closes upon the river, and seems suddenly to narrow and darken its abrupt windings. The most uniform character, however, and one which is more frequently found on the west side, is a clean and steep line of bank about 30 feet in altitude, perfectly level to the eye, and forming the boundary of a vast ocean of prairie, whose horizon or intermediate surface is rarely broken by small islands of poplar or willow, and whose long, rank, and luxuriant grasses, show everywhere a uniform distribution, and indicate the character of the soil they cover so profusely. A subsequent closer inspection of the soil never failed to establish its fertility and abundance, as well as its distribution over areas as far as the eye can reach, both eastward and westward, on the banks of this remarkable river.

164. Such are the general physical features of Red River within British territory. I now propose to enumerate the object which arrest the attention, first in passing up the river to the 49th parallel, and second in travelling along the road on its western bank. This division is necessary, since any attempt to describe the topography of Red River Valley, from points of view limited to the river level, would be something like an effort to portray the general appearance of a capacious farm yard from views which might be supposed to be obtained from the bottom of its well.

OBJECTS SEEN FROM THE RIVER BETWEEN THE INDIAN SETTLEMENT AND THE 49TH PARALLEL.

Aspect of River between the Indian Village and 49th Parallel.—Timber on Banks. —Limestone at the Stone Fort.—Whirlpool Point.—Limestone seen in massive layers above Big Eddy.—Application of the Lime Stone to Building purposes.—Houses seen on the Banks of the Grand Rapids.—Stone Church.—Mill Creek.—Swamp sustained by the dam across Mill Creek.—A large area, probably exceeding 20,000 acres, never flooded at Red River.

165. The objects which arrest attention in ascending the river between Sugar Point and the Lower or Stone Fort, are limited to precipitous clay banks, fringed with elm, poplar, maple, oak, and ash, all of large growth, but not fair representatives of the forest which once occupied its banks, having been subjected to a culling process for twenty years to supply the necessities of the settlement above. Among the underbrush, the Virginian creeper and occasionally a wild grape, with a profusion of convolvulus twining round hazel, and rose bushes are most conspicuous. At the Stone Fort, massive layers of limestone crop out, which have been extensively quarried, and their application is seen in the walls and bastions of the fort built upon the bank here, about forty feet in altitude, and forming the abrupt termination of the prairie stretching westward, which for some distance sustains a small but dense growth of aspens. At each turn of the river above this point the houses of the inhabitants of Red River Settlement come in sight, and these occupy at short intervals the river bank all the way up to Fort Garry, a distance of 23½ miles by the windings of the river. When nearly two miles above the Stone Fort, we arrive at Whirlpool Point, and immediately above this at the Big Eddy;—these are obstacles to further progress, formidable only in name, and like most other local descriptive titles on this river, must be accepted with the mildest interpretation, and only understood to designate marked differences from the general even flow of the waters of the river; a small brook on which a water mill is situated enters the river at the Big Eddy. A short distance above the same locality (the Big Eddy) limestone is seen in heavy

layers on the west bank, and detached fragments in great abundance protect the base of the cliff, which in no instance, observed from the mouth to the 49th parallel, rises above forty feet from the water level. Some very substantial illustrations of the adaptation of the limestone for building purposes occur here, and particularly at the Grand Rapids, 2½ miles farther up.—Among them may be mentioned the house of Mr. Gunn, to whom I am much indebted for a valuable register of meteorological observations, made three times a day during 1855–56. The east side of the river is wooded to a depth varying from a few yards to a mile, and generally this feature prevails along the eastern bank to Fort Garry; the timber is similar to that already described. At the Grand Rapids, which even during the low stage of water in September, offer no formidable obstacle to the Company's and freighters' boats carrying four and five tons, an assemblage of well built stone buildings are grouped, which create a very favorable impression of Red River resources and comfort, not unfrequently repeated as we ascend the stream. There we find a very substantial stone church, capable of seating 500 people, and surrounded with a neat stone wall enclosing an extensive burying ground. About 300 yards south of the church, the parsonage house is seen from the river, and a visit to its interior, to be more fully noticed subsequently, proved that every desirable comfort was enjoyed by the kind and hospitable incumbent, Archdeacon Hunter; adjoining the parsonage is the residence of the curate, Mr. Kirby, and next to that a capacious and well built school-house of wood. Four miles above the Grand Rapids, Mill Creek enters the river, having cut its way through the yielding clay substratum of the prairie, to a depth of twenty-five feet, half a mile from its mouth: Here thw ater mill is situated which gives a name to this creek, but which is fed to a great extent by a large but shallow marshy tract called the Big Swamp, occupying some thousand acres, as indicated on the chart; as will be shewn hereafter, it is mainly sustained by the mill dam holding up its waters, and thus preventing them from draining into the River. Mill Creek and its westerly extension into the swamp, form a very important physical feature in the topography of this region; the slight depression in which it flows, continued through the swamp to Mill Creek, forms the passage of water, during floods, from Red River to Lake Winipeg, whenever the waters accumulate so as to overflow their banks. From this feature, it results that the whole country north of the line drawn on the chart, is dry during the highest floods, and affords an area which probably exceeds 20,000 acres, not liable to the destructive but fortunately rare inundations which have occurred since settlements were first formed here.

Section of the River.

166. For two and a half miles above Mill Creek, the river banks break off abruptly from the prairie level, and, on the east side, are well wooded. The houses of the inhabitants occur at regular intervals upon the immediate banks. At a short distance above the very commodious and comfortable residence of Mrs. Bird, a lower plateau, caused by denudation, commences, and its prairie boundary passes in the rear of Dr. Burns' house, where a portion of the Expedition are residing for the winter, and comes upon the river again before reaching the Presbyterian church. The section marked No. 6 shows the relation of the lower plateau to the general level of the Great Prairie, the relation of the swamp to the river, and also of the ancient beach or ridge of Lake Winipeg to the general level of the country. The following table of heights and distances, taken for this purpose, will exhibit these relations in regular order:

Section across Red River to show the Swamp, River level, Prairie level, and the level of the ancient beach of Lake Winipeg Section.

No. 6. Section across the valley of Red River, from Dr. Burns' house, to the Great Swamp, being on the west side of the river.

Datum: level of Red River, September 18, 1857, or 22.42 below beach mark, or second step of verandah of Dr. Burns' house.

Distance from water mark, 18th September.	Height above water mark, 17th September.	
Water mark 0 feet	0 feet.	
66 west	18.48	
109	11.86	
152	20.74	Dr. Burns' house.
233	20.06	
830	16.52	
1230	19.07	
1330	25.76	
1853	27.52	King's Road.
2431	25.04	
2482	23.80	Small shallow bed of creek.
2667	27.38	Grand Prairie level.
2988	27.30	
4212	26.31	Commencement.
East.		J. Marsh.
4 miles nearly E. N.	86 feet.	Ancient beach of Lake Winipeg.

No. 9. Section often repeated between the Stone Fort and 49th parallel, across the prairie and channel of Red River, where no second plateau occurs.

West .... 20 35 feet. Level prairie beyond.
East ..... 24.35 " " "

Houses and Windmills.—The Assiniboine.—Meanderings of Red River.—End of Settlement on Red River, within British territory.

167. Above Dr. Burns' house the course of the river is gently winding between the high prairie banks, which generally maintain an altitude of about 30 feet; houses and windmills occur at regular intervals, until the steeple of St. John's Church and the peaked roof of St. John's College, the school house, the Bishop's residence, &c., offer the appearance of a large village, which is again re-produced after the sharp turn at Point Douglas, by the imposing Roman Catholic Church, dedicated to St. Boniface, the spacious nunnery and the parish school, with other buildings on the left, and a group of several

commodious private dwelling houses just below Fort Garry, on the right. About half way between these small centres of population, as they may be termed, Point Douglas occurs, and on the east bank of the river, German Creek, a small meandering stream comes in from the south. A quarter of a mile above the Roman Catholic Church, the Assiniboine enters Red River, and a short distance up this stream the summits of Fort Garry come into view. Above the mouth of the Assiniboine the course of the river is exceedingly tortuous. An idea of its meandering may be obtained from the comparison between the river distance from Fort Garry to the mouth of La Rivière Sal, or Stinking Creek, and the relative position of the same places by the road; the former being 16 and the latter 9 miles. The next houses of settlers appear at intervals on the banks for several miles above La Rivière Sal, the last house being situated 13 miles from Fort Garry, or 57 from the 49th parallel. Above this the river windings are fringed with forest, varying in depth from a few yards to half a mile. Here and there naked bends are exposed to the prairie. The peninsula portion on the opposite side is generally clothed with trees of large dimensions, and this character is preserved far south of the 49th parallel.

THE WEST BANK OF RED RIVER FROM THE INDIAN SETTLEMENT TO THE 49TH PARALLEL, A DISTANCE OF 100 MILES BY THE ROAD.

168. From that portion of the Indian Village which lies on the west bank of the river to the lower, or Stone Fort, little can be seen of the surrounding country, as the road traverses a forest of small aspens, and the farms are few in number and small in extent.

The King's Road.—Aspen Woods.—Scene south of Water Mill Creek.—Woods of the Assiniboine.—Rural beauty of the Scenery.

169. The Lower or Stone Fort covers an area of about four acres, and encloses within its walls numerous buildings,

which will be described in another portion of this report. The main or King's Road does not follow the windings of the river, but stretches from point to point, sometimes approaching it at these places within a quarter or half a mile. Where the river windings throw it back to a distance exceeding a mile, inner roads as they are termed, branch off to the river banks for the convenience of settlers, and there is a bridle path all the way from the Lower to the Upper Fort, on the immediate bank of the river. Aspen woods continue to shut out the view until we arrive within a mile or two of Water Mill Creek, when a scene opens upon the right, which discloses on the one hand the white houses and cottages of the inhabitants, with their barns, haystacks, and cattle yards, grouped at short distances from one another, and stretching away in a thin vanishing line to the south, while on the other hand, a boundless, treeless ocean of grass, seemingly a perfect level, meets the horizon on the west. The same kind of scenery, varied only on the left hand as the road approaches or recedes from the farm houses, on the river banks, or passes near the neat and substantial churches, which at almost regular distances intervene, prevails without interruption until within four or five miles of Fort Garry. Here stretching away, until lost in the western horizon, the belts of wood on the banks of the Assinibione, rise above the general level, while from the Assiniboine towards the north again is an uninterrupted expanse of long waving prairie grass, dotted with herds of cattle, and in the fall of the year with immense stacks of hay. This is the ordinary aspect of the country comprising that portion of Red River Settlement which lies between Mill Creek and Fort Garry. Remove the farm houses and churches, replacing them on the river banks by forest trees of the largest growth, and the country between Fort Garry and the 49th parallel, as seen along the road to Pembina, a distance of 70 miles, is continually re-produced in its ordinary aspect of sameness, immensity and unclaimed endowments.

Extraordinary aspects of the country through which Red River flows in British territory.—Aspect at sunrise,—at noon-day,—at sunset,—by moonlight,—at night, when the distant prairies are in a blaze.

170. But it must be seen in its extraordinary aspects, before it can be rightly valued and understood, in reference to its future occupation by an energetic and civilized race, able to improve its vast capabilities and appreciate its boundless beauties. It must be seen at sunrise, when the vast plain suddenly flashes with rose-colored light, as the first rays of the sun sparkle in the dew on the long rich grass, gently stirred by the unfailing morning breeze. It must be seen at noon-day, when refraction swells into the forms of distant hill ranges the ancient beaches and ridges of Lake Winipeg, which mark its former extension; when each willow bush is magnified into a grove, each far distant clump of aspens, not seen before, into wide forests, and the outline of wooded river banks, far beyond unassisted vision, rise into view. It must be seen at sunset, when, just as the huge ball of fire is dipping below the horizon, he throws a flood of red light, indescribably magnificent, upon the illimitable waving green, the colors blending and separating with the gentle roll of the long grass, seemingly magnified towards the horizon into the distant heaving swell of a parti-colored sea. It must be seen, too, by moonlight, when the summits of the low green grass waves are tipped with silver, and the stars in the west disappear suddenly as they touch the earth. Finally, it must be seen at night, when the distant prairies are in a blaze, thirty, fifty, or seventy miles away; when the fire reaches clumps of aspen, and the forked tips of the flames, magnified by refraction, flash and quiver in the horizon, and the reflected light from rolling clouds of smoke above tell of the havoc which is raging below.

Immensity of the prairies of Red River.

171. These are some of the scenes which must be witnessed and felt before the mind forms a true conception of these rich prairie wastes, in the unrelieved immensity which belongs to them, in common with all the ocean, but which, unlike the ever-changing and unstable sea, seem to offer a bountiful recompense, in a secure though distant home, to millions of our fellow-man.

THE ASSINIBOINE RIVER; FORT GARRY TO PRAIRIE PORTAGE, BY THE RIVER.

The Assiniboine River.

172. Fort Garry is situated a few hundred yards west of the confluence of the Assiniboine and Red River. The Assiniboine, for a distance of 130 miles by its windings, the farthest point I reached in a westerly direction, may be said to present an exact resemblance in every important physical feature, except size, to Red River. The tortuous sinuosities of the larger stream are re-produced, with curious fidelity, in the magnificent prairies through which its western rival runs.

Ancient Lake Beaches.

173. For several miles above Fort Garry the Assiniboine flows in a trench excavated through a level prairie to the same depth as the river it feeds; in other words, from 25 to 40 feet. Differences due to local variations in the height of the bank are referable to very slight undulations in the level of the prairie, and to the occurrence of ancient lake beaches or ridges, the first of which is cut by the Assiniboine, near St. James' Church. This ridge continues in a direction nearly due north, until it rises apparently above the general level of the prairie, into an elevated ancient beach of Lake Winipeg. This apparent rise is really due to the gentle slope of the prairie in the direction of the Great Lake. The ancient beach itself is no doubt perfectly horizontal. It is near this spot that the rapids occur which, in the summer months, when the water is low, offer a small impediment to the continuous boat navigation of the Assiniboine for many miles.

Breadth of the River at Prairie Portage.—Sturgeon Creek.

174. Some short distance above the rapids the river widens. At its mouth it may be 150 feet in breadth, and four miles from its mouth, 200 feet, a breadth which it is reported to preserve with very remarkable uniformity for a distance of 130 miles. I saw the river frequently at the different points where the road

approached it, and its breadth, or the volume of water it conveyed, seemed to be in no degree diminished at Prairie Portage, the highest part reached ; indeed, the impression produced after a careful examination of the river at Prairie Portage, almost led to a belief that the volume of water was fully as great there as at its confluence with the Red River; the affluent it receives during a course of 130 miles below Prairie Portage not supplying the exhaustion produced by evaporation. About six and a half miles from Fort Garry the Assiniboine receives a small affluent called Sturgeon Creek, coming from the north-west. The general direction of the river up to this point is nearly due west, and its course comparatively straight. The south bank thus far is heavily timbered to a small depth ; the north bank is much occupied by farms, and is destitute of timber.

Meanderings of the Assiniboine.—Height of Banks.

175. From Sturgeon Creek the course against the stream continues still westerly, but with more decided meanderings, and the wooded points on both sides of the river rarely penetrate a quarter of a mile into the vast prairie on either side. The distance from Fort Garry to where it makes its northwesterly bend is twenty-three miles by the river's windings, but by the road through the prairies and settlements only sixteen miles. The river banks are here about eighteen feet high, and their height imperceptibly diminishes until, at Prairie Portage, they were found by measurement not to exceed sixteen feet, during the stage of water, on the 7th of last September, 1857.

Remarkable Windings.

176. After making its north-west turn, the Assiniboine is so remarkably crooked that a straight line drawn through the tract of country in which it meanders for a distance of twelve miles, would be cut eighteen times by the river, and these windings are confined within such a limited breadth that in a strip of the same length, and 1000 yards broad, the curves of the river would just overlap this boundary four times.

Lane's Post.—Section of the River Bank.

177. At this point of river, which is about twenty-three miles from Fort Garry, there is a Post of the Hon. Hudson's Bay Company in charge of Mr. Lane; the banks here at the time of my visit were about eighteen feet above the water, and quite precipitous, so that there was some little difficulty in getting at the water's edge for washing and other purposes. A fresh exposure of the bank, which by the way, is continually breaking down in small patches and changing, during the lapse of many years, the channel of the river, exhibited stratified whitish clay, and dark drab colored clay from the water's edge to within five feet of the prairie level, which here, as is frequently the case, comes abruptly upon the river. Dark, unstratified or alluvial clay succeeds, having an average thickness of about four feet; this is followed by from six to eighteen inches of black prairie mould. (2)

Settlements cease on the Assiniboine, nine miles West of Lane's Post.—Heavily Timbered Banks.

178. Beyond Mr. Lane's Post, the river course is westerly for a few miles, it then makes a bend towards the north-west, until Long Lake is reached, after which it turns towards the south-west for about sixteen or eighteen miles, thence westerly, ten miles further to Prairie Portage; nine miles beyond Mr. Lane's the settlements cease, until they re-commence at about thirty miles further up the stream by the road, and although the distance from Mr. Lane's to Prairie Portage is not more than forty-three miles, the course of the winding Assiniboine would probably exceed ninety miles. The river banks are heavily timbered, and sustain trees of very large dimensions. The distances between the top of the bank is variable, but appears generally to be between 600 and 800 feet, but at sharp turns it was often not more than 400; whenever it exceeded that distance one side was steep and washed by the water, the other occupied by a sand spit or mud flat at the foot of the opposite bank.

(2.) See section No. 8, on the Assiniboine.

River at Prairie Portage.—Sketch of remarkable Mud Flats on this River.

179. During my stay at Prairie Portage, I had an excellent opportunity of examining the relation of the sand and mud flats to the river banks, as well as the forest which here, to the depth of half a mile, fringed it. The following sketch shows one of the sand and mud flats (Sept. 4th, 1857) about half a mile below Prairie Portage. The river is here about 180 feet broad, and with a rapid current sweeps under the south bank, which forms the outer arc of a very beautiful curve extending over 120 degrees. The cord of this arc is well defined by the old north bank of the river, under which probably it once swept, but now only touches when the channel is full, as during spring freshets; the length of this cord is perhaps 700 yards, and at each end the river is seen sweeping between steep banks, 16 feet high, until a little lower down or a little higher up, similar curves, with their accompanying sand and mud flats recur. These sand and mud flats are arranged in the order of the specific quantities of the materials which compose them, but with such singular regularity and with such curious and interesting admixtures, that I have considered it worth while to describe them with some degree of particularity.

Bones of Elk, Buffalo, Deer, and human skulls found in the Mud Flats of the Assiniboine.—Arrangement of mud, sand, &c., common.

180. A glance at the diagram or sketch may render the following description more intelligible :—At the western extremity of the curve, as shown in the diagram, a few rounded boulders were seen, not exceeding eight inches in diameter; these were followed by gravel spots as the area opened; beyond the gravel tongue, on spits which extended perhaps over a quarter of the segment, flats of coarse sand showed themselves; these were strangely filled and strewed with the decaying and broken horns of the elk, the bones and horns of the elk, buffalo, deer, and just beyond these a human skull, with two or three scattered and water worn skulls of what seemed to be the buffalo; the sands ceased in curved lines, with a small steep descent of about two feet, and was succeeded by mud partly covered here and

there with fine sand, probably drifted by wind. The sanded mud was followed by fine compact mud with numerous deep cracks, partially filled with fine sand. Another fall of about three feet occurred in the form of a bank, and recent mud, smooth and treacherous, occupied the remaining portion of the segment a few inches above the present water level. This arrangement of mud sand and gravelly spits was noticed elsewhere, and probably frequently occurs.

Sugar made on the Assiniboine.—Grape Vines grow wild.

181. The timber on the banks of the Assiniboine is perhaps not so heavy as on Red River, nevertheless some very fine oak and elm, with white wood and poplar of extraordinary dimensions, were seen near the Prairie Portage. A fair quantity of sugar is made by the Assiniboine half-breeds, but not in comparison with what might be easily obtained if systematic habits and a proper appreciation of the fruits of industry existed here. A species of grape grows in profusion on the banks of this river. I suppose it to be the Frost Grape (Vites Andifolia.) The fruit when first gathered is not very palatable, but after hanging in the open air for forty-eight hours, acquires a sweet taste and a very delicious flavor.

THE PRAIRIES, FROM PRAIRIE PORTAGE TO FORT GARRY, BY THE TRAIL.

Lake Manitoba.

182. The name of Prairie Portage is derived from the existence of a portage, nine miles long, between this part of the Assiniboine and Lake Manitoba. I have heard it stated by half-breeds at the settlement, that at seasons of extraordinary high water, the canoes can approach each other from the Assiniboine and Lake Manitoba, so as to leave but a very short distance for the portage.

The Buffalo Hunter's Trail.—Country beyond Prairie Portage.—Country East of Prairie Portage.—The Big Ride.—Limestone Fragments.

188. The road from the Village of Prairie Portage follows a general north-easterly direction for a distance of twenty-nine miles, before it turns south-westerly in the direction of Fort Garry. This deviation is necessary in order to avoid Long Lake, which is an ancient bed of the river, now converted into a narrow, winding lake of great length. About five miles from the portage, the Buffalo Hunter's Trail, leading to the Great Sage Plains, is struck; it passes on to the crossing place in a nearly due west direction. I was informed by the guide that the Hunter's Trail, referred to above, is the only road north of the Assiniboine by which they pass to the high prairies and Sage Plains. Its course is continued for half aday's journey—about ten miles, through good prairie land, similar to that which has been described. Sand hills then begin to show themselves, sustaining large pine and juniper bushes; it requires two days' journey (40 miles) to cross these sandy ridges. A gradual ascent is then made to the Great Plains. The Sand Hills appear to mark the western limit of the truly fertile or alluvial prairie portion of the Valley of the Assiniboine. The crossing place is four days' journey (80 miles) from Prairie Portage, and one day (20 miles) from and below the mouth of the Little Towns or Mouse River. On each side of the road, after leaving the Hunter's Trail, is a very magnificent prairie, bounded on the right by the wooded banks of the Assiniboine, and on the left by the horizon; a few scattered clumps of poplar are seen here and there, but no trees, until the " Big Ridge " comes in sight: The ridge is probably an ancient beach of Lake Winipeg; its elevation does not appear to be more than 60 feet above the prairie level. Where the road touches Long Lake, a spur of the Big Ridge is distant about three miles. I made a diversion from the main track for the purpose of examining the character of the ridge. It rose almost imperceptibly from the prairie, and at its base small limestone fragments appeared in numbers. Ascending the ridge, the limestone increased in quantity until near it summit, slabs were numerous. This ridge extends

northwards to Lake Winipeg, and is probably the flank of the table land, which stretches far to the north and west The ridge is wooded as far as can be seen, and my guide told me that it continued so until it became the abrupt limestone coast of Lake Winipeg, at a distance of forty miles, as he supposed, from our camp. At the foot of the ridge, the prairie is dotted with willow bushes and clumps of poplar, affording an extremely beautiful landscape of vast extent.

Remarkable richness of the White Horse Prairie.—Grasshoppers.

184. Leaving the Big Ridge, and regaining the main road, well marked by the deep ruts formed by the buffalo hunters' carts, we soon arrived at the White Horse Plain, a vast, slightly undulating prairie, without any boundary but the horizon in any direction but the south, where the distant wooded banks of the Assiniboine afford some relief to the eye. The grass is long and rank, and the soil a black mould of great depth, often exceeding eighteen inches. In many places it is thrown up into conical heaps by moles, and uniformly displays the same rich appearance, truly represented by the bountiful profusion of verdure it sustains. This year the edges of the White Horse Plain unfortunately teem with another kind of life. The grasshoppers appeared in countless millions just before my arrival, and every bare patch of ground in the road was filled with their eggs, the living insects leaping through the tall grass in infinite multitudes, yet, notwithstanding, failing to change the appearance of the country in the midst of so great a profusion of food. What the next year's brood may do remains to be seen, their progenitors had come in swarming clouds from the south side of the Assiniboine, but no one could tell of their origin, or of the devastations they must have created before they took their flight, and alighted on the White Horse Plain. (See Grasshoppers, Index.)

Farm houses on the Assiniboine.—Open and beautiful prairies.—Prairies near For Garry, marshy.

185. The last house of the settlement, westward of Whit Horse Plain, is about thirty-three miles from Fort Garry, an

between it and the Company's Post, in charge of Mr. Lane, there are nine houses and farms. The Prairie Portage road, however, does not pass near them, it touches the river only at those bends which do not necessarily compel much deviation from a straight course. The farm houses are similar to those on Red River, but the soil appears to be, if possible, of a better description. Leaving Mr. Lane's post, the river is touched again at the Roman Catholic Mission of St. François Xavier. The road now follows the general course of the river, in the rear of the farms which, from this point to Fort Garry, are not far apart. The whole country north of the river, between Prairie Portage and Sturgeon Creek, consists of level, open, and beautiful prairies, uniformly fertile, and in a great measure free from wet places or marshes; wherever these occur, there does not appear to be the least difficulty in draining them at a very trifling cost of labor and time. From Sturgeon Creek to Fort Garry, the houses and farms resemble, in all respects, those on Red River. The prairie is dotted with islands of poplar and willow bushes, and within two miles of the fort, decidedly marshy in its present condition. Much marsh and wet land is said to exist in the south of the Assiniboine, about the sources of Stinking River.

THE ROSEAU RIVER.—THE LITTLE AND BIG RAT RIVERS, AND THE COUNTRY UNWATERED BY THEM.

Affluents of Red River within British territory.—Channel of Rivulets formed.—The Big Swamp.

186. Between its mouth and the 49th parallel, the Red River of the north receives numerous affluents, only two of which are worthy of a separate notice. Near its junction with Lake Winipeg, Netty Creek, draining a considerable extent of flat country, comes in from the west. This smaller river acquires some degree of importance, from the circumstance that it conveys away the excess of water, during high floods, from the

channel of the Red River, so that an extensive area below Mill Creek has never been known to suffer from an overflood. Several small streams, which have excavated their channels since the settlement of Red River, are fed by the Big Swamp delineated on the map. Some of these little rivulets, which by the way are dry during summer, have originated from an attempt to drain King s Road, by the people of Red River. A small ditch was made in the first instance, about two feet deep; this was cut away during the melting of the snow in the spring, to a depth of ten to twenty feet, forming deep but not wide gullies, in the very friable clay of the prairies. The Big Swamp, which was filled during the flood of 1852, keeps those rivulets alive in the spring and fall.

Affluents of the Assiniboine.

187. On the east side German Creek comes in just below the Roman Catholic Church; it is a very tortuous and sluggish rivulet, draining some swamps to the east of Red River. The Assiniboine is the chief affluent of Red River. This meandering river has a length of perhaps four hundred miles, and receives in its course some navigable and probably very important streams. The little Souris, or Mouse River, comes from the Coteau de Missouri, and on its bank, is reported by the half-breeds to expose valuable seams of (lignite) coal, an article of priceless worth in this woodless region. The Calling River, Oak River, and Rapid River, affluents of the Assiniboine, all unwater extensive tracts of country, respecting which little is known.

Rat River.

188. Above the Assiniboine, La Rivière Sal, or Stinking River, occurs about nine miles from Fort Garry. Much of the country through which it flows is said to be filled with brackish swamp. Thirty-seven miles from Fort Garry and Scratching Creek, is crossed on the route to Pembina. Here a river is seen winding for miles through a boundless prairie, without a tree or shrub on its banks. On the eastern side, about——

miles from Fort Garry, Rat River, in Lat. 49° 35′ 10″, (1) joins its waters to Red River, and ten miles north of the 49th parallel, the Roseau River, an important stream, comes in from the region west of the Lake of the Woods. The Roseau River, and the country it drains, deserve a special notice.

THE ROSEAU, OR REED GRASS RIVER.

Course of Roseau River.—The long ridge.—Interesting character of the ridge.

189. The general course of this stream from its confluence with Red River to Roseau Lake, is a few degrees to the south of east. It enters Reed River about ten miles north of the 49th parallel, and it is probable that Roseau Lake is on the boundary line between Rupert's Land and Territory of Minnesota. The course of the Roseau is very tortuous, and for the first twenty miles it meanders through a beautiful prairie, with a belt of heavy forest trees on its banks. Near the mouth of the river, on the south side, there is a considerable quantity of low land, but above that point the banks vary from fifteen to twenty feet in height until, at the crossing place, the long ridge is reached. Here the banks are from fifty to fifty-five feet above the level of the river. Near the crossing place, the ridge has probably an elevation exceeding sixty feet above the level of Red River. It, and its offsets, form a very singular and most interesting feature in the topography of the whole valley, and will be more fully noticed in the proper place.

Timber of the Roseau beyond the ridges.

190. The ridge once past, the whole face of the country changes. The soil becomes poor and sandy, although still preserving a prairie or plain character. The timber on the banks of the river fast dwindles to small sized oak, elm, birch, and poplar, until it gives place, about forty-six miles from the mouth, and perhaps seventy or eighty by the winding of the

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(1.) Keating (Major Long's Expedition.)

stream, to extensive marshes in which islands of small pine are to be seen.

Marshes of Roseau River.

191. At the commencement of these marshes the Roseau River moves sluggishly, and its stream soon becomes dead water, with a vast expanse of flooded land on either side, extending, according to our guide, fifty miles to the right hand and to the left.

Country of the Roseau beyond the beginning of the Marshes.

192. Having found it impossible to proceed further on horseback than the beginning of the great marshy tract of the Roseau, and not being provided with a canoe, the following description of the country rests upon the authority of the guide who accompanied us, and who had resided at Roseau Lake, for a year and a half, when in the service of the Hon. Hudson Bay Company. The river channel can be traced through a marsh ten miles long, nearly on a level with the water in the river. The depth of the marsh does not exceed three feet, and it is quite possible to wade on horseback through it. The Hon. Hudson Bay Company's route to their post on Roseau Lake (in 1851) retired from the river when the waters ceased to flow, and pursued a direction some miles to the south of the channel, probably within the United States territory. In 1847, a very dry season, it was possible to proceed with carts in a direct line near the banks of the river, from the beginning of the marsh to the post, one mile and a half from Roseau Lake.

Water fowl on Roseau Lake.—Altitude of Roseau Lake.--Roseau Lake to the Lake of the Woods.

193. An idea of the character of the country about this post may be inferred from the guide's description of his attempts to destroy the monotony of his life, when stationed at Roseau Lake. He informed me that when he wished "to see anything" beyond the four walls of his log shanty, and the rushes by which it was surrounded, he was in the habit of mounting to the roof, and from the top of the mud chimney, enjoying the view; which

consisted of reeds to the north, reeds to the south, and reeds to the west, as far as the eye could reach, and to the east, Roseau Lake, fifteen miles long by ten broad, with a deep fringe of reeds. On the bosom of this retired sheet of water, in the spring, and the fall, he was enabled to watch countless millions of ducks and geese, and the noise of their shrill cries, with the flapping of wings, as they would rise to take their morning flight to the north or south, according to the season of the year, were almost the only sounds he heard, save the sighing of the wind through the reeds, during his dreary abode in the waste of Roseau Lake. The altitude of Roseau Lake, above Lake Winipeg, probably does not exceed 150 feet; and, as the elevation of the Lake of the Woods is at least three hundred and seventy feet above the same level, there must still be a rise of 200 feet to be overcome before reaching the height of land. Our guide described the Roseau River, before it enters Roseau Lake, as stretching far to the south in the territories of the United States. He also said that issuing from the great Muskeg, or swamp, occupying so much of the height of land between Red River and the Lake of the Woods, was a narrow rapid stream of fifty miles long, and emptying into Roseau Lake, thus forming a route by means of which the smallest sized canoes may pass from Roseau Lake, through the Great Muskeg to the Lake of the Woods.

Indian from the Lake of the Woods.—Ten days on the road.—Breadth of the Muskeg at the height of land.

194. At noon on the 26th September, when discussing with the guide the possibility of proceeding further up the banks of the Roseau River on horseback, we heard the sound of a gun, proceeding apparently from the river. Having fired one in return, we were not surprised some time afterwards to see an Indian approach. He had just arrived, with his family, from the Lake of the Woods, by the route proposed to be taken by Mr. Dawson and myself some weeks before. He described the route in the same way as the guide, and in no material respect differing from the accounts we had before received from other

Lac la Pluie Indians, who had been engaged to convey us through it, before the intervention of the tribe, narrated in my report from Islington Mission. He had been ten days on the road, but might have accomplished the journey thus far in shorter time, had he not required to hunt by the way for his family, who accompanied him. At my request he drew up a map of the route, which was in almost all particulars similar to that sent in my report from Fort Francis. He ascended a small river, marked on the map Reed River, from the Lake of the Woods, for a distance of thirty miles to the Great Muskeg at the height of land. He was two days dragging his canoe through the Muskeg, which is here nine miles broad. He then descended the rapid stream, forty to fifty miles long, before noticed, which is called by the Indians Muskeg River, and found himself among the rushes or reeds of Roseau Lake.

Dry prairie north of the crossing place in the Roseau.—Still Water Creek.—Rat River.—Country between Rat River and the Lake of the Woods.—Little Rat River.—Nine Mile Swamp.—Nine Mile Swamp easily drained.—French Settlement.

195. Returning nearly in our steps to the crossing place, we went over to the right bank of the Roseau, and after threading through a forest of fine oaks, about one quarter of a mile deep, found ourselves emerging upon an open, dry prairie, bounded on the east by the low wooded ridge before noticed as occurring on the south side of the river. The distant belt of woods, fringing Red River, might just be seen in the far western horizon, the whole intervening space being a rich and level prairie, without shrubs or willows. Six miles from the Roseau, Still Water Creek occurs. Its waters are deep, and, as its name implies, sluggish, or almost stagnating. Between Still Water Creek and Rat River some marshy spots occur, while on the right the ridge, wooded with aspen, continues in the direction of the Rapids of Red River, near which spot it is found within four miles of the banks of the main stream. Rat River is an insignificant brook, coming from the Great Muskeg, which occupies the height of land to the east of the valley of Red River. At

the crossing place it is fifteen feet broad. It sometimes serves the Indians as a means of communication between the Lake of the Woods and Red River by the following steps: 1st. Rat River east, flowing from the Muskeg at the height of land into the Lake of the Woods. 2. The Great Muskeg, through which the small canoes are dragged. 3. A small river flowing into swamps, from which, 4th, Big and Little Rat River issue, which unite below the crossing places on the road to the settlements as shown in the chart. Four miles from Big Rat River, Little Rat River was crossed, and the tract then led to the point of junction of the two streams, until it came upon a ridge, which it followed for a distance of ten miles, after which the great Nine Mile Swamp occurs, where water lodges in marshy intervals, for the distance which has given its name to this wet prairie. A strong Scotch plough, drawn by a stout team of oxen, would soon effect the drainage of the Nine Mile Swamp. It partly originates from the excessive luxuriousness of the grasses growing upon this level expanse, which, in a humid season, holds up sufficient water to give permanency to the wetness of this portion of the prairie (1). Hay, in considerable abundance, as exemplified by the stacks which were seen in all directions, is made in the dry intervals of the Nine Mile Swamp. This French settlement commences immediately on the northern extremity of this characteristic illustration of Red River enterprize and energy, as applied to the improvement of the country. A very little well-directed labor would convert these extensive marshy areas into the richest pasture and hay privileges, and drive to more congenial haunts the myriads of snipe and plover we disturbed in our passage through it.

(1.) See introductory chapter for a probable explanation of the origin of many of the "swamps" in the Red River Valley.

PART III.

GEOLOGICAL SKETCH OF THE CANOE ROUTE FROM FORT WILLIAM, LAKE SUPERIOR, TO THE MOUTH OF RED RIVER, LAKE WINIPEG, AND OF THE VALLEY OF RED RIVER, NORTH OF THE 49TH PARALLEL.

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THE KAMINISTIQUIA TO THE HEIGHT OF LAND.

Mr. Murray on the Valley of the Kaministiquia.

196. The Valley of the Kaministiquia, with its extension through Dog Lake and River to the height of land, was examined by Mr. Murray, Assistant Provincial Geologist, in 1846. The results of that survey are to be found in his Report, addressed to Sir William Logan, and printed in the Report of Progress in the Geological Survey of Canada for 1846-47. The following brief notice of the character and distribution of the rocks of the country drained by the Kaministiquia is in part abbreviated from Mr. Murray's report.

Country above the Kakabeka Falls belongs to Laurentian Group—Huronian rocks east of Kakabeka Falls—First exposure of Argillaceous Slates—Granite and Syenite Ranges about Dog Lake—Valley of Dog River.

The whole of the interior of the country above the Kakabeka or Grand Falls to the height of land, belongs to the

Laurentian series of rocks, including granite, syenite, gneiss, and the lower slates (micaceous and chloritic schists) and a line, drawn from the falls to Thunder Bay, would mark nearly the junction of the Upper or Huronian slates, which rest upon them. The upper or black argillaceous slates occur in magnificent mural precipices at the Grand Falls. Sketch No. 6 shows a fine exposure on the right bank of the river. The talus from which the view was taken is composed of thin sheets of hard slate held together by the roots of grasses, and wild mint, and afforded at the best but a very insecure footing. The rock supporting this talus shows many of the spheroidal concretions charged with iron pyrites noticed by Mr. Murray in his report. The first exposure of the black argillaceous slates was seen about five miles from Pointe des Meurons, or fifteen miles from the mouth of the river. A large exposure with a S.S.W. strike occurs at the Décharge des Paresseux, and the junction with the gneiss upon which the formation reposes was seen at the foot of the Portage d'Ecarté, three-quarters of a mile above the Grand Falls, and close to the spot indicated by Mr. Murray:—"The high land around Dog " Lake is chiefly granite or syenite, and the islands on the " western side are the same, with mica slate resting on it " occasionally. On the west coast, several promontories jet " out with deep bays between them. Each point in succes" sion appears to be the arch of an anticlinal axis bringing up " the syenite in the middle, while mica schist dipping in oppo" site directions rests upon it." The valley of Dog River is bounded by low granite ridges as shown on the map, while the height of land, though not exhibiting an exposure of rock, in situ on the Portage path, probably consists of granitic and syenitic ranges, as described by Dr. D. D. Owen.

THE HEIGHT OF LAND TO RAINY LAKE.

Portage du Baril, dip and strike—French Portage—Mica slate in Gneiss—Granite overflow at the head of Doré Lake—Granite Hills near Sturgeon Lake—Dip and strike at the Fifth Rapids—Small anticlinal axis in Pine Lake—Dip of schist—Probable persistent exposures of chloritic slate—Tilted schist at the Grand Falls of the Nameaukan—Schist dipping in curves—Joints and quartz and felspathic veins—Rock dotted with beautiful specimens of plumose mica.

197. In Mille Lacs, exposures of what was supposed to be white glistening quartz are numerous; they are called by the voyageurs, sail rocks. Dome shaped hills receding from the shores, and having an altitude of about one hundred feet, were visible, on the south-east side of the lake in making the traverses. At the Portage du Baril, the dip was nearly vertical and strike at N. 70° E. At French Portage micaceous schist was seen resting on gneiss, at an angle but slightly inclined from the vertical. The strike was N. E. by E. At the head of Doré Lake, the granite seems to have overflowed the mica schist. The thin edges of the overflow are seen resting on the shore, and beneath the water its undulating boundary can be traced for some distance. On an island in Pickerel Lake, the strata were much twisted and curved, and consisted of mica schist with bands of gneiss, intersected with numerous quartz and felspathic veins. Dip 20° N. from vertical strike N. E. by E. At Pickerel Portage, boulders begin to be numerous, and are also abundant at Doré Lake. On Sturgeon Lake, low granite hills form numerous jutting points or promontories. Near a small expansion of Sturgeon River, above the Second Falls, mica schist, well stratified, is exposed, with a strike N. 60° E. and dip 7° S. from vertical. The micaceous portion of the rock is separated by divisional planes (quartz) of about one-eighth to half an inch in diameter, and by the weathering of the micaceous portion, these project in the form of abrupt ridges, traceable for many yards, and preserving a remarkable parallelism. At the fifth rapids of this river, the strike is N. 65° E., dip 15° S. E. from the vert., and about three-quarters of a mile further on the strike was found to be N. 30° W., at

an angle of 45°. At the Portage de L'Ile, at the Sixth Falls, the dip is N., at an angle of about 40; the rock is a highly stratified micaceous schist, passing into a hornblender schist. Below Portage de L'Ile, the river expands into a lake about three-quarters of a mile broad, and of the same length, with a deep bay to the N. E., and one corresponding to the S. E. Two islands in Pine Lake, below Portage de L'Ile, appeared to show small anticlinal axis. The schists were seen to repose at a low angle (N. 60 W.) on a reddish colored, unstratified rock below; but no specimen was obtained. It was cracked into huge blocks. On the main land, N. W. of the two islands, the schists were seen to dip N. 60 N. at an angle of about 30°. About five miles below Portage de L'Ile, fragments of chloritic schist occur on the beach; not water worn, or showing abrasim. A few hundred yards further on, a stratified rock cups out in very persistent layers; some of them extended several feet from the cliff, with a varying thickness of from two to six inches. The dip was about 20 N., and it may have been an exposure of the chloritic schists, whose fragments were found above it. Not being able to approach, on account of the swift current sweeping the base of the cliff, where the exposure occurred, no specimens were procured. At Snake Falls, the river passes over a schist highly inclined to the N. E., and below them, many fine exposures of the same schist occur on the islands, frequently projecting like the end of boards of unequal lengths leaning against one another, and varying in thickness from two to five inches. Three miles below Snake Falls, the rock passes into gneiss, and numerous veins and dykes of granite are seen to penetrate it nearly at right angles to the strike; the dip is here N. W. Ten miles below Snake Falls, mica schist again comes into view, unstratified with quartz, and felspar layers from one to two inches thick. The strike is E. 5° N., and the dip nearly vertical. At the Grand Falls of the Nameaukan, the schists are tilted by steps in the form of the segment of a circle. In Lac Nameaukan, dome shaped granitic islands parallel to one another, and of oval form, present themselves not far from the entrance of Lac La Croix. The direction of the longest axis is N. 60 W. A line prolonged through the Granite Islands, in a N. W. direction, touches the schists about three hundred yards further on. Their apparent dip, as seen from the lake was N. W., at an angle of about 45 °. One island, wholly composed of schist, inclined at a high angle, is followed at a distance of about fifty yards by a long flat gneissoid dome. About six hundred yards from the island, the schists dip lightly to the S. E. On the north side, the dip could not be seen; but on the west side, they were seen to bend round in a curved form, and from a N. W. dip towards the S. E. On the next island, the gneiss was intersected by numerous joints having a direction N. 70 E., and of quartz, and felspathic veins, N. 25 ° W., or nearly perpendicular to the former. Its surface towards the N. W. by W. was smooth, and inclined at an angle of about 10 °. The rock of the new portage is a granite containing mica in plates, and every where dotted with numerous beautiful specimens of plumose mica.

RAINY LAKE TO RAT PORTAGE, LAKE OF THE WOODS.

Dr. Bigsby on the Geology of Rainy Lake.—The Division of Rainy Lake.

198. In an article on the Geology of Rainy Lake, South Hudson's Bay, by Dr. J. J. Bigsby, (1) the geological conditions of this remote body of water, are thus summed up: "Chloritic and greenstone slates, gneiss and mica slate, in proportional quantities in the order here set down, seem once to have occupied the lake basin, with an E.N.E. strike, and a N.N.W. dip at a high angle usually; but subsequently a very extensive outburst of granite, with some syenite, has taken place to the great disturbance of the stratified rocks, and penetrating them both in intercolations and crosswise; these intrusive

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(1) On the Geology of Rainy Lake, South Hudson's Bay, by Dr. J. J. Bigsby, F.G.S., &c. Quarterly Journal of the Geological Society, 1854.

rocks occupy a very large portion of the lake." Dr. Bigsby, who accompanied the Surveyors of the Canadian Boundary Commission in 1826, had excellent opportunities of forming a correct acquaintance with the geology of Rainy Lake. He divides its region, for convenience of description and reference, into six distinct parts, each having its own geological characteristic. The west shore of the lake is mainly occupied by granite, which at the northern portion is finely granular, and porphyritic in equal quantities. On the east coast of the north-westerly extension of Rainy Lake, are chloritic and greenstone slates; on the eastern arm of Rainy Lake, pale red granite is the prevailing rock, and near the northern extremity of this arm, naked ridges, white as porcelain, and 500 feet high, occur.

RAINY RIVER.

Debris of Silurian Limestone in the Valley of Rainy River.—Hornblendic Schist.

199. Dr. Bigsby says, "At the commencement of Rainy River, on both banks, and for two miles of the south shore of the lake, there is a large quantity of untravelled debris of an upper silurian limestone, which is always sharp edged and slaty; and now and then is planted into the earth in such great square masses, that I am constrained to consider it living rock, split into fragments by the intense cold of these regions, containing the same fossils as the limestone of the Lake of the Woods; I believe it to be of the same age; it is browner and coarser in texture. There is not much doubt but that it underlies most of the bed of the Rainy River, and is continued into the plains about the Red River Settlement." Throughout the Valley of Rainy River, no rock exposures were seen, with the exception of two ranges of hornblendic schist, which cross the river at the Manitou and Grand Rapids, causing those deviations from the overflow of Rainy River. A few hundred yards up one of the rivers on the United States

side, fine exposures of a very compact schist occur, which, from their supposed similarity to limestone, have led the voyageurs to call the affluent on which it is found "Limestone Creek."

The Lake of the Woods: Dr. Bigsby's paper on.

200. The canoe route through the Lake of the Woods affords scarcely any opportunities of procuring specimens of the rock formations, which are characteristic of this beautiful, and, in some respects, promising region. Dr. Bigsby's paper and map, published in the Quarterly Journal óf the Geological Society, supplies much valuable information.

Polished surface of Greenstone, conglomerate with Glacial Furrows.—Directions of the axis of the enclosed Pebble.—Vertical Sections.

201. On a small island, about 25 miles north of Garden Island, a remarkable exposure of "greenstone conglomerate" was seen, nearly on a level with the water of the lake. The surface of the rock was nearly horizontal, beautifully polished, and strongly marked with ice (glacial) furrows and scratches. The direction of the furrows was N. 25° E., they were all parallel to one another, some of them half an inch in depth, and nearly double that measure in width. They continued to pursue a uniform direction for many yards, until concealed by the bushes which fringed the bare rock some 40 or 50 feet from the water's edge. The conglomerate presented the appearance of an immense table of mosaic work. The pebbles and small boulders enclosed in the matrix, were often water worn, some of them, however, showed no lateral abrasion, preserving their angles sharp, and well defined. They were all ground down to one uniform polished surface. The direction of the largest axis was N. 64° E. and S. 64° W. The imbedded boulders and pebbles varied from half an inch to 18 inches in diameter, and appeared generally to lie with their flatted side facing the south west. The colour of the matrix was a pale green, and of the imbedded pebbles gray, with a tint of green. A vertical section of the rock exhibited the

pebbles and boulders, as if resting upon the extremity of the longest axis, with a slight inclination to the east. Sketch No. 13 shows the appearance of this conglomerate with the glacial grooves.

THE WINIPEG TO RED RIVER.

Large area of intrusive granite in the Upper Winipeg.—The country characterized by great sterility.

202. The country between the sources of the Winipeg, and a few miles south of Islington Mission, a distance of nearly 30 miles, appears to be largely occupied by a vast range of intrusive granite and syenite, in the form of dome shaped hills, varying from 150 to 200 feet high. A view from the summit of one of the highest of these, about 15 miles due north from Rat Portage, offered an unvarying appearance of their rounded summits as far as the eye could reach in a westerly direction. The canoe route we pursued was a short Indian path from Rat Portage to the Great Winipeg, in a nearly straight northwesterly direction. The country traversed was characterized by great sterility, and an unusual proportion of bare rock. High precipitous mural cliffs, without a trace of stratification observable in them, often formed the boundaries of this branch of the Great Winipeg.

Mica Schists show themselves.—Granite Hills.—Conglomerate.—Gneiss.

203. Near DeL'Isle rapids indications of mica schist were apparent, and below the portage the rock was much twisted and involved, and intersected with numerous granite veins. Further stratification was occasionally seen, the inclination being at a low angle, towards the N.E. At James Falls is a very hard, dark green colored rock, without any distinct stratification. It is traversed by numerous broad granite veins, and also intersected by dinsimal planes. Abrupt hills of granite appear on the opposite side of the river, and on an island just above the falls, a beautiful section of conglomerate

forms the precipitous river bank. In it are seen huge masses of this dark green rock before noticed. Two miles below the falls gneiss is exposed, with a nearly E. and W. strike and a dip of about 40° N.

Striped Rock.

204. At the Portage du Bois the gneiss passes into a hornblendic schist, traversed by numerous quartz veins. The whole is very much twisted and intersected by large and small granite dykes running in a different direction to the quartz veins, but so curved and meandering as not to appear to have a general direction at the spot where the observation was made, the rock in some places might well receive the name of a "striped rock." The general direction of the strike was due west, the dip nearly vertical and about 5 to 10° N. The Falls of Portage du Bois are singularly beautiful; the river is very broad, not less than 500 yards, and its current is broken by three small wooded islands, between which the water rushes before it makes its final leap.

Gneiss.—Dykes.—Bonnet Lake.—Needle refuses to act.—Cliffs of Clay.—Mica Schist and Gneiss.—Laurentian Group prevails from the height of land to Lake Winipeg.

205. Near the mouth of the Pennawa, the gneiss is finely stratified, although much twisted in places. The strike is N. 55° E.; the dip at a high angle east. Numerous felspather and granite dykes and veins intersect the rock, the first named are often six inches broad, running N. 5° E.; the second pursue various directions, but are most numerous in a direction 10° east of the felspather. Ten miles down the Pennawa, the strike is N. 75° E., and dip S. 25°, E. 10° from the vertical. The rock is gneiss, beautifully stratified. A short distance from the mouth of the Pennawa, the river glides over a smooth exposure, having an inclination of about 30° in the plane of stratification, and strike E. 45° S. A lake about six miles long forms the termination of the Pennawa, and is connected with Bonnet Lake by a narrow passage between high and rugged rock exposures, which form the termi-

nation of a range of dome shaped hills, of which sketch No. 12 affords a rough outline. The island is gneiss with distinct micaceous layers; the strike W. 10° S., and the direction of the range is about north and south, curving slightly to the south-east. The summits of the hill range are bare, and appear to be polished or smooth on the eastern exposures. Unworn greenstone fragments and boulders are numerous on the S. W. shore of the island. The dip seen on the main land was at an angle of nearly 45°, half a mile from the Island before noticed. Mica schist is seen reposing on the gneiss, apparently conformable. The needle here refused to act, and on passing close to a high exposure of the schist, it vibrated between 50° W. to 50° E. of north, as roughly estimated by the sun. The schist was seen dipping south at a higher angle than the gneiss. Low cliffs of clay begin to come upon the river soon after passing the first falls below Bonnet Lake, and conceal the rocks below. At the first falls below the Bonnet, a highly micaceous gneiss shows a strike E. 25° N., dip about 40°, but variable numerous flextures being visible. Patches of mica schist come through the gneiss, which is intersected by large coarse veins and dykes of granite. Between this point and Fort Alexander, exposures occur at the different falls and rapids, showing rocks which apparently belong to the same group as those which have been already described, but favorable opportunities of procuring specimens or of ascertaining their precise character did not occur. All rock exposures alluded to in the foregoing sketch, with the possible exception of the Valley of Rainy River, may be classed with the members of the Laurentian group.

LIMESTONE.

First Exposure.—Limestone fit for Building purposes.

206. The first exposure of Limestone of Silurian age was seen just below the Stone Fort, Red River. It here crops out in massive layers, as shown in section No. 3; the colour of

its weathered surface is a pale yellowish grey, and of fresh surfaces, a grey more inclined to white; it is hard, but its fresh fractures are not clean. It makes a good building material, and is extensively used for that purpose. The lower or Stone Fort is constructed from the bed which crops out on the river bank beneath it. The rock is highly fossiliferous; specimens of its fossils have been sent to Sir William Logan, who has kindly consented to examine them.

Second Exposure.—Rock highly Magnesian.—Stony Mountain.—Any quantity of Limestone for building purposes at Stony Mountain.

207. The second exposure was seen about two miles below the Grand Rapids, (section No. 4.) In both instances the surface was irregularly inclined, and so nearly horizontal that it was found impossible to ascertain the dip. The most general inclination appeared to be very slightly towards the south-west by west, but other exposures, not far removed, showed it was thought a perceptible inclination in the opposite direction: Wherever seen on the Red River, the rock is highly magnesian, and often contains small imbedded masses which appear to hold magnesia in greater proportion than lime. About nine miles west of the Middle Church, Red River Settlement, at a place locally designated Stony Mountain, cliffs of limestone show a bold front facing the west, with an altitude of about sixty feet above the prairie. Section No. 7 shows a rough approximation of these cliffs. It will be seen that the ancient lake beach, shown in the section, has an altitude which may probably correspond with the old lake ridge on the opposite side of the river, ascertained by measurement to have an altitude of sixty-seven feet above the prairie. The layers of rock are nearly horizontal, very massive, and building materials to any extent are here easily accessible.

DRIFT AND CLAYS.

The Great Dog Portage.—Areas of Drift.—Drift Clay over the Valley of Red River.—Bricks and Pottery.

208. The Great Dog Portage has already been described a formed, in part, of an immense bed of sand reposing upon clay

A section (No. 1) of this singular and interesting barrier which accompanies the topographical description of the country shows the relation of the sand clay to one another and to the rock upon which they rest. Small areas of drift occur at the different portages, and also on the islands on Mille Lacs, but in no instance, until we arrived at Rainy River, were they seen of sufficient extent as to warrant especial notice. In Rainy River buff coloured clay, unstratified and sustaining stratified clay, was seen repeatedly. In it were numerous limestone boulders, some of which were not destitute of fossils. On the Winipeg, areas of drift begin at the Islington Mission, and continue to increase in dimensions, though far apart from one another, until we arrive at the Manitou Rapids, where a drift clay covers the country on the banks of the river. In the Valley of the Red River and the Assiniboine, the unstratified clay, with boulders from Laurentian rocks and limestone, rises from the water's edge to within four feet of the surface, after which its colour changes, shows stratification, and is evidently lacustrine and alluvial: The unstratified clay of these river valleys contains a more than usually large per centage of magnesia. The alluvial portion is reported to be well fitted for the manufacture of brick and common pottery, in patches, but these I did not see.

THE ANCIENT BEACHES AND RIDGES OF LAKE WINIPEG.

Mean beach 67½ feet above the Prairie.—Stony Mountain.—Ridge at the Roseau.—Forms a beautiful road for 100 miles.—Marks the limit of good land east of Red River.—The Big Ridge on the Assiniboine marks the limit of good land. —The Couteau de Missouri.—Pembina Mountain 210 feet high.—The ancient beaches and valleys of Lake Winipeg limit the area of good land; by far the greater portion of good land lies within the limits of British Territory.—Small Ridges.—Diameter of the small ridges.

209. These will be best understood by an inspection of the map. They evidently may be divided into several groups; but the opportunities of unravelling their relations were extended

over too short a time to admit of general conclusions being drawn. The most prominent ridge, and in fact the one which limits the fertile portion of Red River and the Assiniboine, as far as seen on the north and east sides, approaches Red River within four miles of the middle settlement, and was there found to be 67½ feet above the prairie level; on the opposite side of the river Stony Mountain corresponds perhaps in altitude with this ridge. Three or four miles west of Stony Mountain the Big Ridge of the Assiniboine is seen sweeping round from the north towards the west, in the direction of the valley of that river; it probably forms the northern limit of the fertile prairies of the Assiniboine. On the east side of Red River, the ridge before noticed can be traced from the middle settlement to the Roseau, which it crosses about 46 miles from the mouth of that stream; at the crossing place on the Roseau, its height was estimated to be the same as at the middle settlement; it forms a beautiful dry gravel road wherever traversed, and suffers only from the draw-back of being the favorite haunt of numerous badgers, whose holes on the flank, and also sometimes on the summit, are dangerous to horses; it is perfectly level for a hundred miles, and everywhere as far as my observation enabled me to judge, shows the same even rounded summit; it may yet form an admirable means of communication through the country; it marks the limit of the good land on the east of Red River. The Big Ridge of the Assiniboine is apparently a counter-part on the west side of Red River, and north of the Assiniboine, of the one just described, and probably it was produced at the same epoch, and by the same agent. It forms the flank of a Rateau, which was stated by my guide to extend north to the shores of Lake Winipeg. Between this ridge and the Assiniboine the land is eminently rich and fertile; beyond the ridge north, it is described by the half-breeds as wooded, sandy, and poor. About half a day's journey west of Prairie Portage, the Big Ridge was said to close upon the Assiniboine, and give place to sand hills clothed with pine, which forms the east flank of the high prairies beyond. On the south bank of the Assiniboine, and crossing the Pembina River and 49th parallel, within a day's journey of Pembina, the north-eastern flank of the Coteau de Missouri limits the valley in that direction, and is known by the name of Pembina Mountain, and still further west, by the designation of Turtle Mountain. Dr. Owen measured the altitude of Pembina Mountain, and found it to be two hundred and ten feet above the plain; it is, says Dr. Owen, a terrace of table land, the ancient shore of a great body of water that once filled the whole of Red River Valley. On its summit it is quite level, and extends so for about five miles westward to another terrace, the summit of which is supposed to be level with the great Buffalo plains that stretch away towards the Missouri. Pembina Mountain is composed of incoherent sand, gravel, and shingle. We could see this great boundary of Red River Valley to the south-west looming in the horizon during both journeys from Fort Garry to Pembina. The ancient beaches and ridges of Lake Winipeg acquire great interest from the fact that as far as my observation extended, and in exact accordance with all information derived from the natives, they form the limits of the good land in the Valley of Red River and the Assiniboine, and by far the greater part of this land lies within the British Territory, or north of the 49th parallel. South of that national boundary the ridges begin to close upon Red River, and contract its valley, a physical confirmation which would be at once deduced from an inspection of the map of Minnesota, showing the position of the Coteau de Missouri. Striking off from the main ridge on the east side of the Red River, numerous smaller ridges pass into the prairies, and some times appear to die away; occasionally they intersect one another at different altitudes. Near Rat River, three of these ridges occur which have a difference in elevation of three, five, and ten feet above the level prairies; they run into one another, and are not traceable on both sides of the highest. In form they are similar to the main ridge, and also composed of gravel; they likewise abound in badger holes; their diameter varied from 80 to 100 feet. In every instance they formed excellent level, and dry roads. Their position is shown on the large map.

COAL (LIGNITE).

210. Many of the half-breeds with whom I conversed at Prairie Portage stated that they had seen coal in the Assiniboine, below the mouth of the Little Souris River, or Mouse River, and on the Little Souris, or Mouse River itself. Mr. Jno. Spence, of Prairie Portage, drew a small chart, No. —, for me, showing the position of what he called "coal" on the Assiniboine. I saw and conversed with a half-breed who had brought "a few bushels" of this coal to the settlement, for the purpose of ascertaining its fitness for the forge; he stated that he was a blacksmith, and had used the coal, and found it answer, but it required a strong draft; I procured from another half-breed several specimens, which accompany this report, and are designated "Lignite from the Little Souris, Assiniboine Valley." On this tributary of the Assiniboine, the lignite was described as crossing out in bands exceeding a foot in thickness, and occupying a large area on the Little Souris.

Position of the Coal on lignite beds—Presence of Bands of Sioux on the trail of the Buffalo Hunters, prevented an exploration of the Assiniboine, with a view to ascertain the truth of the statements about "coal."—Small fragments of lignite in the drift or mud of the Assiniboine.

211. The distance of the crossing place of the Souris, where the buffalo hunters' trail passes on to the high prairies, about the Coteau de Missouri, was represented to be three days' journey by land, with a winding navigable river communication to, and far beyond the crossing place, where the bands of "coal" are said to be exposed. I endeavored to induce John Spence to go with me and point out the locality, where the lignite dropped out in the Assiniboine; he expressed perfect willingness to do so, if I could procure for the trip ten men in all, so that watches might be established by night in consequence of the presence of several bands of Sioux Indians on the trail of the buffalo hunters, who were then coming in from the Great Prairies, after their summer hunt. The Sioux had succeeded in driving off ten horses, from the tail of the caravan, about half a day's

journey from Prairie Portage the night preceding my arrival there; and this incident led John Spence and others to decline going with me, unless the number of the party amounted to ten in all. This large addition I found it impossible to procure at Prairie Portage, and after my return to the settlement, the time at my disposal was too short to admit of the exploration. In carefully searching the recent mud flats of the Assiniboine, at, and a little above Prairie Portage, I found numerous small fragments of lignite, from which it might be inferred that an exposure of the parent rock was situated some distance up the river, but beyond this, and the reiterated statements of many who had been up the river before named, I found no proof of the existence of lignite in available quantities.

Specimens of lignite common in the settlements—Necessity of a supply of fuel for increasing settlements.

212. In the settlements on Red River and the Assiniboine, small specimens of lignite were frequently shown to me by different people, who stated that they procured them from the crossing place on the Little Souris, and an Indian had a bag containing about half a bushel of the same material, together with specimens of silver mica, carefully treasured up in many folds of dressed buffalo skin. Many intelligent people in the settlements appeared to be much impressed with the importance of ascertaining the true nature and extent of the lignite beds on the Little Souris. The great scarcity of wood in the prairie country, and all through the valleys of Red River and the Assiniboine, making the question of a permanently increasing settlement in a measure dependent upon the supply of fuel which may be obtained from other sources, than those offered by the aspen covered ridges, or the thin stripes of timber on the immediate banks of the rivers.

SALT.

Brine Springs of Manitoba.—Salt even now made, and sells at 10s. sterling a bushel.—Supply stated to be unlimited.

213. The shores of Lake Manitoba have long been celebrated for their brine springs. At the present time, a considerable

quantity is manufactured by the half breeds for their own use, and for the supply of the settlements, where it commands ten shillings a bushel. Specimen No.   is from Lake Manitoba. A half breed of Scotch descent, who had made salt for many years at the springs, told me, that if a market existed for it, the springs would supply any quantity that might be required.

PART IV.

THE SETTLEMENTS ON THE RED AND ASSINIBOINE RIVERS, IN THE DISTRICT OF ASSINIBOIA, RUPERT'S LAND, WITH A SKETCH OF THE CLIMATE OF ASSINIBOIA, AND THE APPROACHES TO THE VALLEY OF LAKE WINIPEG.

CHAPTER I.

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NUMBERS AND ORIGIN OF THE POPULATION OF RED RIVER SETTLEMENT.

The Census of Red River Settlement.

214. The census upon which the statements contained in the following pages are founded, was taken in the years 1843, 1849, and 1856, and the copies which appear in the Report were kindly furnished me by Mr. W. R. Smith, the Clerk to the Council of Assiniboia.

Population, Increase very slow—Cause of this—Foreign Element diminishing.

215. The total population at the settlements on Red River and the Assiniboine amounted to 6,523 in 1856, 5,291 in 1849, and 5,143 in 1843, showing an increase in the first six years of only 148, and in the last seven years of 1,232 souls. This great difference in the apparent rates of increase, is one which may be easily explained, by enumerating the offsets from Red River Settlement, which have occurred since the periods when the census was taken. These consist of a number of families, embracing 120 persons, forming a settlement at Prairie Portage. St. Joseph's at Turtle Mountain has absorbed a very considerable number, exceeding 500 persons, and many families have left the settlement to seek a home in other localities. At the same time the population of Red River has received very few accessions from distant countries; indeed, the foreign element, as it may be termed, shows a very decided diminution in one important source of supply.

Decrease of Europeans and Canadians.—Increase in Half-breeds.—Unfavorable effects of the diminution of the foreign element.

216. During the seven years which elapsed between 1849 and 1856, a decrease in the numbers of Europeans or Canadians, that is of people not born in Rupert's land, although British subjects, and originally coming from England, Scotland, Ireland, or Canada, has taken place to the extent of 102 families. The increase in native or half-breed families during the same period was 132. Between the periods of the census taken in 1843 and 1849, there was an increase in the European and Canadian element to the extent of 74 families, and of the half-breed of 113 families. The diminution in the number of European settlers has already worked a change for the worse in the habits and customs of the half-breeds or natives. For reasons which will be enumerated further on, the tendency of the native population is gradually to throw off the humanities of civilization, and approach nearer to the savage wildness of Indian life. An influx of European or Canadian blood had a very good effect in arresting this tendency, which circumstances, far more than disposition, have induced and fostered.

Population according to origin.—Increase or decrease during 13 years.

217. According to origin, the population of Red River now stands as follows:—

	Families.	Families.	Families.	Period of comparison, 13 years.	
	1856.	1849.	1843.		
Rupert's Land { Half breeds, Natives	} 316	684	571	Increase in half-breed families	245
Scotland..............................	116	129	110	" Scotch "	6
Canada..............................	92	161	152	Decrease of Canadian "	60
England..............................	40	46	22	Increase of English "	18
Ireland	13	27	5	" Irish "	8
Switzerland..............................	2	2	2	" Swiss "	0
Norway..............................	1	3	0	" Norwegian "	1

I had a long conversation with the single Norwegian who now remains at Red River; he is a very old man, between 90 and 100 years; he came to Rupert's Land more than 40 years ago, and he described Red River as being "a very good country for a poor man."

Numbers of European and Canadian families have left the settlements. — Increase of poverty in the settlements.—Diminution of males in the settlements. —Reason of this—Young men go to the United States.

218. In 1843, or 13 years before the census of 1856, there were twenty-seven more European or Canadian families than there were at Red River in May 1856. These numbers show that in place of an introduction of emigrants of a character likely to refine and elevate the rough natures of the natives, endowed as they are with many peculiar and valuable qualities, those who have been from their youth familiar with the advantages and blessings of civilization, have gradually left the settlement and sought a home elsewhere. The increase of poverty, or incapability of supporting families, is seen by the average number of individuals belonging to each family.

In 1849 the average of each family was .... $5\frac{31}{1052}$.
1856 " " " .... $6\frac{31}{1082}$.

The difference in the whole population of 1856 and 1849 being 1232 souls, while the difference in the number of families is given at 30 only. This very extraordinary discrepancy was stated by Mr. Smith, under whose direction the census was taken, to arise from the general depressed circumstances in which many families found themselves. Numbers were unable to live in separate houses, and it now happens that two and sometimes three families, formerly occupying distinct houses, and cultivating distinct farms, are crowded together in one house for the sake of economy. In 1849 there were 137 more males than females in the settlements; in 1856 there were 73 more females than males. The reason of this remarkable change in the relative numbers of males and females in so small a community, and in such a short period of time, was stated to arise from the circumstance that during the past five or six years, many young men have gone to seek recompense for industry in the United States, which the district of Assiniboia has not yet offered to them.

Natives or Half-breeds desire a Nationality.

219. The term "native," distinguishing the half-breeds from the European, and Canadian element on the one hand, and the Indian on the other, appears to be desired by many of the better class, who naturally look upon the term as applied to a race of Christian men, scarcely appropriate. There is evidently a strong and growing feeling among the few who have turned their attention to such matters, that in the event of an organic change occurring in the Government of the country, the "native" or half-breed population should not be neglected, or thrust on one side.

INDUSTRIAL OCCUPATIONS.—THE FARMS AND FARM HOUSES OF RED RIVER.

Appearance of the farms and farm houses.—Swamps susceptible of drainage.

220. It will be gathered from what has been said, that the appearance of the settlement between the Upper and Lower Fort, is remarkably attractive and pleasing at the first sight. On the river bank and extending from it to a distance of about a third of a mile, farms are laid out in narrow strips, the houses are generally close to the edge of the level table land of the prairie, where it is abruptly cut by the channel of the river, and is thought to be high enough to protect them from occasional floods; but where the boundaries of the prairie retire from the present river channel, they are sometimes placed near the road, and rarely in the depression formed by the ancient course of the stream. Above Mill Creek there does not appear to be any rise of land sufficient to afford security against extraordinary floods, such as those of 1826 and 1852, when the waters rose above the road, or more than 30 feet above the present river level. On the west of the road, as already re-

marked is a boundless prairie, here and there enclosed, and offering to the eye perfectly level fields of waving grain, or luxuriant pasture. Where no enclosures west of the road have been made, the prairie often passes in what are locally termed swamps or marshes; but which are so susceptible of drainage, and conversion into the richest pasture lands, that they do not deserve the title which has been assigned to them.

Appearance of the settlement at the first sight, pleasing—Indifference to the future characterizes the people.

221. A closer acquaintance with the settlements dispels the favorable impression with which a stranger at first regards them. At a distance, the neat white washed houses, with their gardens and farm yards continuing without interruption for twenty miles between the forts, the herds of cattle, horses and sheep, feeding on the plains, the vast expanse of what seems to be meadow of the richest description lead one to suppose that universal prosperity and contentment would here be won without anxiety or trouble. Nevertheless, no one can fail to be struck with the indifference to the future, which seems habitually to characterize the people, especially the French portion of the population, and to show itself everywhere in their unfinished dwellings, neglected farms, and extravagant indulgence in dress, or in articles they covet. Many of the apparent efforts of industry which, seen from a distance, excite admiration, shrink upon a nearer approach into sluggish and irregular attempts at improvement abandoned before completion. The farms and farm buildings in the occupation of the majority afford no sign of recent amelioration, and in general, it may be said, that the buildings, which in Canada, would be considered good, roomy country houses, are exclusively possessed and occupied by the retired officers of the Hudson's Bay Company, the traders or merchants of the settlement, and the clergy.

Appearance of the homesteads of the hunters indicate slow decay.

222. The farmers' homesteads and the hunters' and trappers' cottages, if these classes here can with propriety be separated,

bear rather the appearance of slow decay, and a decline in fortune, than a healthy hopeful condition. It would be out of place to discuss the causes which may have led to this prevailing complexion, which, it is to be hoped, but temporarily distinguishes the future bone and sinew of the Red River country.

Farming operations conducted in a slovenly manner.—Causes of the negligence of the "natives" to be sought for apart from soil and climate or indisposition to labor on the farm.

223. With few exceptions, and these are chiefly among the Scotch, farming operations are conducted in a very slovenly manner. Weeds abound in most of the fields appropriated to grain; some fields are seen here and there to be altogether abandoned, and the out-houses wear a neglected aspect, or one of ruinous decay. As might be supposed in this primitive part of the world, manure is commonly allowed to accumulate in the front of the stables and cattle sheds, or sometimes thrown into the river, or heaped in such a position that it may be swept away by spring freshets. All these drawbacks and indications of negligence and imprudence are not uncommon, within certain limits, in every new country, indeed in any locality remote from markets, and wherever ignorance universally prevails; but where such a marked neglect and seeming dullness abounds, in the midst of very general intelligence and acuteness, besides means to disseminate elementary knowledge (to be noticed hereafter), and where, too, that depression is limited to the so-called agricultural class, in possession of a soil of unsurpassed excellence, the enjoyment of an admirable summer climate for agricultural purposes, and no greater share of periodical contingencies than those to which every other country is liable, the causes which induce these evils must be sought for in other directions than those which may be said to spring from a dislike for agricultural operations, or a characteristic inability to take advantage of the boundless appliances promoting happiness and comfort which lie within their reach.

FARMING AND ITS RESULTS.

Capabilities of the country not to be judged of by results obtained under present circumstances.

224. The description which has been given of the general aspect of the farms and farm-houses in the settlements is not such as to create a favorable impression of the condition of husbandry in this remote region, but it would be very unfair to form an opinion of the agricultural capabilities of the country from the results obtained by the majority, under its present state of isolation, and the direction of the best efforts of the inhabitants to objects the reverse of those which belong to a pastoral life.

Farm not object of exclusive attention.

225. The farm, as an exclusive object of industry and attention, is recognized by very few of the people of Red River. I had an opportunity of examining two or three farms to which the owner devoted both attention, industry, and some degree of skill. I shall attempt to describe what I saw, and this description may be received as applicable to many hundred thousand acres on the banks of Red River and the Assiniboine, in respect of the returns they would yield to industry.

Mr. Gowler's farm, stack yards and barns.—Root houses.

226. One of the farms which I visited was occupied by Mr. Gowler; it is situated on the Assiniboine, nine miles from Fort Garry, and it is marked on the map which accompanies this report. On the 16th September, the day I visited Mr. Gowler's house and farm, nearly all farming operations were over. A small stack-yard was filled with stacks of wheat and hay; his barn, which was very roomy, was crammed with wheat, barley, potatoes, pumpkins, turnips and carrots. His roots were shortly to be transferred to root houses, which he had constructed by excavating chambers near the high bank of the Assiniboine, and draining them into the river. The drain was supplied with a close and tightly fitting trap, which was

closed when the water rose during the spring above its mouth, which at that time might be eight feet above the level of the river. The chambers were about nine feet high, and their ceilings three feet below the prairie level. Access was obtained through a hole in the ceiling, which was covered with a neat little moveable roof. There were three of these cellars or root-houses before the dwelling-house, and between it and the river. Frost never entered them, and he found no difficulty in preserving any quantity of potatoes and turnips through the severe winters of this region.

Want of a market for produce.—Gowler's farming practice.—Extraordinary turnips.—Excellent potato crop. — Period of planting potatoes.—Indian corn, onions, melons.—Melons at Fort Garry and elsewhere.—Gowler's cheese and tobacco.—Old associations long retained by the Europeans at Red River.—Mr. Gowler's opinion of the Assiniboine.

227. Mr. Gowler farmed fifty acres in white and green crops, hay and pasture being furnished by the prairie. He owned much more land, but found it useless to crop it, as no market for surplus produce existed. Last year he had sold many bushels of potatoes at sixpence per bushel, and had carted them nine miles. I had been previously informed of the extraordinary success of Mr. Gowler in growing wheat, but I found upon inquiry that the practice he employed was simply not to grow wheat after wheat; he had grown fifty-six measured bushels to the acre. The price of wheat at the time of my departure was 4s. 5d. sterling a bushel, but last year at the same time it had been 3s. 6d. sterling. His turnips (Swedes) were magnificent; four of them weighed seventy pounds, two weighed 39 pounds, and two others thirty-one. Whatever manure his yard and stables supplied he gave to green crops and the garden. A portion of the potato crop was still in the ground; they far surpassed in quantity, quality and size, any I had ever seen before. Mr. Gowler very kindly turned them up out of the soil wherever I pointed out. I counted 13, 14, and 16 potatoes, averaging 3½ inches in diameter, at each root. They were a round white-skinned variety, and seemed to be like those known in Canada as the "English White." The

potatoes were planted on the 1st June, and were ready for eating on the 16th or 18th August. The winter supply was rarely taken out of the ground before the beginning of October. The greatest enemy to the turnip crop is the cut-worm, (the grub of an elater). Indian corn succeeds well on Mr. Gowler's farm, and onions of rare dimensions were growing in his garden. He had had this year a splendid crop of melons, the seed being sown in the open air at the end of May, and the fruit gathered about the 1st September. At the time of my visit the melons had all been consumed, but I had several opportunities of tasting and enjoying this fruit, at Fort Garry and elsewhere, on the Assiniboine and Red River. In every instance they were grown in the open air, without any artificial aid beyond weeding, from the time the seed was planted to the maturation of the fruit. Mr. Gowler insisted on my tasting his wife's cheese, and smoking his tobacco, before I departed. The cheese was tolerable; the tobacco, which was grown in the neighborhood and highly prized by Mr. Gowler, was dreadfully strong, and would involve, I should think, long training, in order to acquire a taste for its qualities. Nevertheless, Mr. Gowler preferred it to some excellent fig-leaf which I offered him; he remarked that he had grown and prepared it himself, and knew what it was. I may here relate, with a view to shew how long old associations linger in the recollections of the European portion of the population, in this remote region, that when I sat down to table Mr. Gowler turned inquiringly to his wife, saying, "And where is my plate?" "Oh, John! you "would not think of sitting at table with gentlemen?" Mr. John seemed puzzled for a moment; his son-in-law and children were looking in silence from different corners of the room. He cast a hasty glance around, and the true feelings of independence and manly right showed themselves, as he exclaimed, "Give me "a chair and a plate; am I not a gentleman, too? Is not this "my house, my farm, and these my victuals? Give me a plate." Mr. Gowler had been in Rupert's Land for, I think, 23 years. His native county was Cambridgeshire. He considered the Assiniboine River to be a "Paradise of fertility," and all that was wanted, in his opinion, to make it a region which, if known, would soon attract a large emigration, found expression in the words "market" and "labor." I venture to introduce here some remarks which Mr. Gowler made, as he accompanied me to the gate of his farm-yard, where my horse was tied. "Look "at that prairie; 10,000 head of cattle might feed and fatten "there for nothing. If I found it worth my while, I could "enclose 50, 100, or 500 acres, and from every acre get thirty-"six to forty bushels of wheat, year after year, I could grow "Indian corn, barley, oats, flax, hemp, hops, turnips, tobacco, "anything you wish, and to any amount, but what would be the "use? There are no markets, it's a chance if my wheat is taken, "and my potatoes I may have to give to the pigs. If we had "only a market, you'd have to travel long before you would see "the like of these prairies about the Assiniboine."

Gowler's Stable, Piggeries, &c.—Grasshoppers appeared.

228. The substantial character of the barn, stables, and piggeries, all constructed of wood, their neatness and cleanliness, the admirable arrangement of the hammels for cattle, and the sheds for sheep, all showed how far a little energy and determination, instructed by the experience of earlier years would go in re-producing amidst the boundless prairies of Assiniboia, the comforts and enjoyments which are by no means the rule among the small farmers of Great Britain. I have brought specimens of Mr. Gowler's barley, wheat, prairie hay and carroway seed, which I took at random from the stacks in the yards, or from the garden, where the last named fragrant herb was growing largely. I regret to say that a few days before my visit the grasshoppers had arrived from the south-west, and consumed in a single day every green leaf in the garden which remained exposed to their attacks.

The Indian Missionary Village.—The Rev. Mr. Cowley's Garden.

229. On the 3rd of October I visited the Indian Missionary Village, about seven miles below the Stone or Lower Fort, and fourteen from the mouth of the river. Here I had an op-

portunity of acquiring trustworthy information from the Rev. Mr. Cowley, the very hospitable and excellent missionary at this station. In the garden around the house some flowering shrubs and annuals were still in bloom. The air was fragrant with the perfume of migionette, and the bright orange yellow extroltzia shone pre-eminent among asters and sweet peas, which had escaped the autumn frosts.

The Mission Farm.—Wheat.—Period of the growth of Wheat, Barley, &c.—Magnificent Potato Crops. — Culinary Vegetables in the Garden.—The Farm Yards.—Wild Fruits.

230. The farm attached to the mission was cultivated with more than ordinary care, as it is not only intended to serve for a model for the Christian Indians settled in the vicinity, but also to provide them with seed and supplies in the event of their own stock failing, a contingency by no means improbable, since habits of forethought or economy are rarely acquired by these people until the second generation. In part of the garden alloted to vegetables, a small area was devoted to wheat, for the purpose of raising seed from an early variety, which Mr. Cowley had procured from Scotland the year before. The "Scotch wheat" was sown on the 16th and 18th of May. It was ready for the sickle and reaped on the 24th of August, having been 97 days in arriving at maturity. The common wheat of the country was sown May 5th, and harvested August 18th, having required 105 days to grow and ripen. Barley was sown May 28th, and reaped August 18th. Indian corn is planted about the 23rd May, and ripens every year. Potatoes are planted from the 22nd to the 26th of May. The potato crop is here truly magnificent. I was favored with an inspection of the produce of a small field, afterwards visited, and certainly no finer or more plentiful returns could be desired. All perfectly clean and sound, and of very unusual size and weight. With the permission of Mr. Cowley I took four potatoes which lay close at hand, on the top of a large heap, containing very many equalling in size those I had taken without special selection; when carefully weighed, they were

found to average ten ounces each (10.1 ounces), a practical experiment proved them to be an excellent table variety. I may here mention that in the garden I noticed asparagus growing luxuriantly, beet, cabbages, brockoli, shallots, and indeed most culinary vegetables. In the farm-yard were ducks, fowls, turkeys, pigs, sheep, with some excellent milking cows, and through the politeness of Mrs. Cowley, I was enabled to form a very favorable opinion of several varieties of preserve from the wild strawberry, cranberries and plums, which grew in profusion not far from the village. Among many kinds of wild fruits common here and much sought after by the Indians, are red and black currants, high and low bush cranberries, two kinds of raspberries, gooseberry, two kinds, mossberries, blueberries, summer berry, choke cherry, stone cherry, &c., these are the common names by which they are known in the settlements. In the appendix will be found a list, with their scientific names attached.

Crops at Prairie Portage.—Areà to which these observations extend.

231. An enumeration of the cultivated crops at Prairie Portage, on the Assiniboine, 60 miles due west of Fort Garry, will complete a brief view of the agricultural productions raised without difficulty within the limits of settlement in the district of Assiniboia, and a glance at the map will show that while the Indian Village is its most northerly settled limit, Prairie Portage is the most westerly, and Mr. Gowler's farm lies between these two extreme points. From the observations I was enabled to make, I believe that whatever is stated with respect to these points will apply to the whole of the area occupied by settlements between them, and may be justly said, with slight exceptions, to be noticed in the absence of any known reason to the contrary, to extend over many hundred thousand acres on the north bank of Assiniboine, and on the east and west bank of Red River, from the Indian Village to the 49th parallel. Respecting the south bank of the Assiniboine, I cannot speak from personal observation, but I was informed by very credible and competent persons,

that it differed in no material physical features from the country I saw on the north bank.

Indian Corn grown by Mr. John Spence, of Prairie Portage.—Mandan Corn.—Ripens well.

232. At Prairie Portage, I visited Mr. John Spence, with a view to learn from him the accuracy of some reports. I had heard of the existence of a kind of coal on the banks of the Assiniboine, to be noticed under its proper heading. In order to reach Mr. Spence's house, I had to pass through a field of Indian corn, and from the proprietor I obtained the following statement, —the kind of Indian corn which is most common in the settlement, is called the horse-teeth corn, and it does not always ripen. The variety sown by Mr. Spence (specimen No. 10) he termed the mandril corn, the seed was procured from the Indians, near the head waters of the Missouri; probably the "mandan corn" would be the correct name. He had cultivated it for two years, it ripened well both years. One of his neighbors, a Cree Indian, had cultivated it for four years and had not met with any failure. Mr. Spence sowed his corn on the 1st June, and gathered it Sept. 10, or after a period of 102 days. In dry seasons it ripens earlier and is planted about the 20th of May. The wet spring of the present year retarded all agricultural operations. I visited a small house adjoining the one in which Mr. Spence resided and found it filled with a portion of his corn crop.

233. Since all facts bearing upon the cultivation of Indian corn in this region are valuable, as tending to afford trustworthy evidence respecting the adaptation of the summer climate to agricultural purposes, I venture to submit a few additional particulars, bearing upon the culture of this important plant, and other kinds of farm produce.

Mr. Lane's (of the Hudson's Bay Company) opinion respecting Indian Corn.

234. Mr. Lane, the gentleman in charge of the Honorable the Hudson's Bay Company's Post on the Assiniboine, twenty-two miles west of Fort Garry, in speaking of the horse-teeth corn,

stated that it did not always ripen on that part of the river.—Spring frosts rarely affect it, but autumn frosts sometimes cut it off. Mr. Lane thought that careless cultivation was the reason why it did not progress fast enough to escape the early autumnal frosts. Indian corn sown on dry land arrived at maturity much sooner than that which was sown on rich and moist prairie mould.

Mr. Flett's statements.—Cultivation of potatoes.—Wheat on the White Horse Plain.

235. On the night of the 15th September, I stayed at the house of Mr. Geo. Flett, fifteen miles west of Fort Garry: Mr. Flett's turnips have been altogether consumed by the grasshoppers; his wheat is safe and good; he says that Indian corn succeeds well, and almost always ripens; it is his opinion that it may always be relied upon when care is taken; it does not progress quick enough on the open prairie to escape every season the early autumnal frosts; on the points of the river where the soil is lighter and dryer than in the open prairie, and where some shelter may be obtained from the neighboring timber, he has never known it to fail. Mr. Flett finds the cut worm the great enemy to his turnips; his potatoes for the summer crop are planted 1st June, and ready for eating from the 10th to the 15th August; the winter supply he does not lift until October. Over the whole of the White Horse Plain District, thirty bushels to the acre is an average crop of wheat, but on New Island, forty bushels is not only common but generally expected.

Mr. P. Gladieux's Farm.—An immense Liard, four feet ten inches in diameter.—Cultivation of Peas.

236. Mr. Pierre Gladieux, a French "native," residing on the right bank of the Red River, five miles south of Fort Garry, at whose house I was kindly entertained on the night of 29th September, under circumstances which will be related in the proper place, showed me his farm yard, barns, &c., four pea stacks, several wheat stacks, and five or six hay stacks, all of fair dimensions, were neatly arranged in the stack yard, while the cattle

yard was tenanted by a number of cows, pigs, horses and poultry. Before Mr. Gladieux's house, the trunk of an immense liard (populus) lay ready for splitting into firewood; the size appeared to be so unusual that I measured it carefully, and found it to be four feet ten inches in diameter six feet from the base, and four feet eight inches in diameter ten feet from the base; at the base it measured 16.5 feet in circumference, and showed 150 well defined rings. Mr. Gladieux's peas were sown on the 7th May, and reaped on the 25th September.

237. Among facts, which at the first blush may seem too trifling to record, I have noted the following, which appear to possess some value in their bearings upon the summer or agricultural climate of this region.

Tomatoes.

238. At the hospitable home of the Rev. Archdeacon Hunter I saw tomatoes ripening in the house; they had been gathered before maturity, in anticipation of frost, and were laid upon a shelf in the same way as we are accustomed to dispose of them in Canada, under similar circumstances. Tomatoes, well known to be very susceptible of frost, can be grown in the open air at Red River, under the lee of fences or the side of a house, but unless the maturity of the fruit is accelerated by careful cultivation, the autumnal frosts generally arrive before it ripens thoroughly in the open air.

Mignionette.

239. So late as the 7th October, the day before my departure from Red River, I gathered mignionette and several other annuals in Mrs. Bird's garden, near the middle settlement, and saw similar garden flowers still in bloom and untouched by frost, in Mr. Logan's garden, and also in Mr. McDermott's.

Gardens at the Upper and Lower Forts.—Melons.—Enormous crop of Melons.—Thirty melons from one seed.—Importance of the cultivation of the melon in relation to climate.

240. In the large and well ordered gardens attached to the Upper and Lower Forts, every variety of vegetable, commonly

grown in Canada, was flourishing in the greatest luxuriance.—Cauliflowers, Windsor beans, celery, beets, several varieties of cabbages, in fact every desirable vegetable was seen in profusion, and of excellent growth. Lastly, and certainly not the least important in its relation to summer climate, melons of many varieties, I had the good fortune to see and eat in several parts of the settlement, In every case I inquired into they were grown in the open air, without any assistance beyond throwing up the soil into the form of a little hill. The seed was planted in the earth in May, and the fruit gathered towards the end of August. From a small patch in the garden belonging to the very hospitable and generous Recorder and Governor of Assiniboia, James Johnston, Esq., no less than 103 melons were produced. At the time when I had the opportunity of seeing this feat of horticulture, fifty-six melons (a green flesh variety) had been gathered, and fifty-seven still remained, all of which had nearly reached maturity. I did not measure the bed, but to the best of my recollection it did not exceed twenty-five feet in length by ten or twelve in breadth. Having being accustomed to cultivate melons myself, near Toronto, the surprise I felt at the remarkable yield of a delicate fruit, which does not always ripen in the open air at Toronto, could scarcely be attributed to a want of familiarity with the requirements of soil and climate necessary to produce this result. In other parts of the settlement I saw melons in great profusion, but, perhaps, in no instance in such rich abundance and of such excellent flavor as in Mr. Johnson's garden. I find in my notes, however, the following memorandum:—"September 10th, saw in Mr. Logan's house several melons which were grown in the open air, without any protection. Mr. Mackenzie informed me that this year he raised from one seed thirty melons. On the 10th of August, one melon weighed, by actual measurement. six pounds." I look upon the cultivation of the melon in the open air, without any kind of assistance beyond weeding, as second to the production of Indian corn, in its relation to the climatic adaptation of a country for agricultural purposes; and in view of this connection, I have ventured to introduce the foregoing facts relating to its cultivation and growth in Assiniboia.

241. Not considering it necessary to advance any further particular illustrations of farming and its results in Assiniboia, I propose, in the succeeding chapter, to enumerate the general conclusions at which I arrive respecting the adaptation of the climate and soil of that country to the cultivation of different kinds of farm and garden produce.

CHAPTER II.

Cultivated crops and forest productions.—Indian corn, 242 — Specimens of Horseteeth and Mandan Corn, 243 — Wheat, forty bushels to the acre common on new land, 244 — Reason why a Half-breed would not cultivate wheat, 245 — Diseases of wheat uncommon; The Hessian or wheat fly; Grasshoppers destructive, 1817-1820 — Specimens of wheat, 246 — Barley and oats, 247 — Hay, 248 — Hops, 249 — Peas, 250 — Tobacco, 251 — Potatoes, 252 — Turnips, Beets, &c., 253 — Sugar, 254 — Flax and hemp, 255 — Lumber; Timber found only in narrow strips on the river; Ridges afford aspen; The Winipeg; Fuel necessary; Settlers anxious to find coal, 256 — Live stock, sheep diminishing; loss of animals during the winter, 257.

Agricultural Implements, &c., 258—Red River carts, 258—The prairies offer facilities for rearing stock; No market for beef, mutton, tallow, hides, &c.; Reasons for the neglect of stock raising; Habits of the Half-breeds; The introduction of Europeans required — Opinion of many at Red River; Red River will become a great grazing country when the fur trade relinquishes its influence, 259.

CULTIVATED CROPS AND FOREST PRODUCTIONS.

I. INDIAN CORN.

Indian corn may be always expected to ripen in Assiniboia.

242. Varieties of Indian corn exist, which may always be expected to ripen in Assiniboia. In order to secure this result, the rich and moist prairie soil requires draining, which may be accomplished without difficulty or expense, by running deep furrows with a common plough, at certain distances apart, through the flat vegetable mould in the field devoted to Indian corn. This grain is a sure crop on the dry points of the Assiniboine and Red River, where the absence of superabundant moisture permits it to ripen within a certain period, so as to be secure against the early autumnal frosts. No doubt varieties of Indian corn are to be found in New England and in Lower Canada, which would ripen several days earlier in Assiniboia than the horse teeth or even the mandan corn, which are cultivated there.

243. The localities where this crop was seen growing and ripe specimens produced, were as follows:

1. At numerous places on the Assiniboine from Fort Garry to Prairie Portage.
2. Numerous localities on Red River, from 15 miles above Fort Garry, to 7 miles below the Lower or Stone Fort.
3. Near the mouth of the Winipeg River.
4. On islands in the Lake of the Woods.

244. The localities where it was said by reliable authority to grow and ripen well:

1. On many parts of the Winipeg River.
2. On the shores of Manitoba Lake.
3. Near the shores of many parts of the southern river of Lake Winipeg.

SPECIMENS.

No. 10. Indian Corn (Mandan Corn) from Prairie Portage, Assiniboine River; an eight rowed variety; average number of grains in each ear, 340; Sept. 1857; planted June 1st; reaped August 20th.

No. 11. Indian Corn from the middle settlement, Red River. (Horse-teeth Corn.) Sept. 1857.

No. 12. Indian Corn from near Fort Garry, Red River. (Horse-teeth Corn.) Sept. 1857.

No. 13. Indian Corn from Indian Missionary Village, Red River. Sept. 1857.

In examining these specimens it should be borne in mind, that the spring was very backward and wet in Assiniboia, and I was repeatedly informed by all who saw my specimens that they were not favorable illustrations of the production of the Red River country.

II. WHEAT.

Forty bushels to the acre common on new land.

244. This is the staple crop of Red River; its cultivation is so general, and the good quality of the grain, so well and widely known, that very little need be said on that head. In favorable years, that is in years which have not been distinguished by so wet and backward a spring for farming operations, as that of the present year, wheat ripens and is ready for the sickle in three months from the day of sowing. I think it very probable that new varieties from Canada, or the New England States, would ripen in less than three months, and this is the opinion of several of the best farmers in Red River. The mean summer temperature there is 67° 76′, or 3° 78′ above that of Toronto, while the corresponding period shows a mean of 63° 98′. No fact, however, is more satisfactorily determined than the admirable adaptation of the climate and soil of Assiniboia to the culture of wheat. Forty bushels to the acre is a common return on new land, and I have already stated that Mr. Gowler has obtained fifty-six bushels to the acre, without the introduction of any artifice beyond deep land furrows to keep the rich vegetable mould of the prairie dry.

Reason why a half-breed would not cultivate wheat.

245. The great drawback to the cultivation of wheat is the want of a market. On enquiry of a native, where was his wheat field, he said that he had grown enough the year before to last for two years, and the chances of his being able to dispose of any surplus were so small that he determined not to trouble himself this year with growing wheat. As it happened he would have been well repaid for any surplus, the expected arrival of the troops, and other circumstances, created a temporary market for wheat, which, however, could not have been foreseen by the easy going half-breed.

Diseases in wheat uncommon. The Hessian or wheat fly. Grasshoppers destructive in 1817 to 1820.

246. None of those diseases with the exception of smut or insect, enemies to which the wheat crops in Canada and the

United States are subject, occur, it is said, at Red River. Of this fact I cannot speak from personal experience; all I can say is that I heard no complaints of rust, nor did I see a single instance of its presence; yet it would be very unwise to infer from so short an experience that rust is not an enemy to the wheat crops there; the character of rust leads to the supposition that it will be found wherever wheat is grown, if the climate be favorable to its production. The absence of rust is probably more a question of summer climate than of peculiarities in the soil which prevent its attacks. Although I made numerous enquiries respecting destructive insects, yet I could hear of none similar to the Hessian fly or wheat fly, as having been observed there. The grasshoppers from 1817 to 1820, were the most destructive enemies known, and it is unfortunately probable that next year their ravages will have again to be lamented.

The specimens to which the following list refers will show the character of Red River wheat in its unmanufactured and manufactured states:

SPECIMENS.

Specimens of Wheat both manufactured and unmanufactured.

No. 13. Wheat in the ear, from Mrs. Bird, Middle Settlement, Red River. September, 1857.

No. 14. Wheat from Mr. Gowler's farm, Assiniboine river. Sept., 1857.

No. 15. One quart wheat from Red River. (McDermott's mills.) Sept., 1857.

No. 21. One quart Red River wheat, from the crop of 1857. (McDermott's mills.)

No. 22. One pint Red River wheat, from the crop of 1856. (McDermott's mills.)

MANUFACTURED WHEAT.

From Mr. Flett's Mill. (Windmill.)

No. 26. First flour, from wheat not dressed by any machinery, merely run before the wind. Ground at Red River, October 3rd, 1857.

No. 27. Second flour, from wheat not dressed by any machinery: Red River, October 3rd, 1857.

No. 28. Third flour, from wheat not dressed by any machinery: Red River, October 3rd, 1857.

No. 29. First flour, (McDermott's mills.)

No. 30. Second flour, (Do.)

No. 31. First flour, (Assiniboine River.)

III. BARLEY AND OATS.

247. Barley and oats require no special notice.

Specimen No. 16. One quart barley from Red River.
" 17. Barley from Gowler's farm.
" 23. Crop of 1857. No. 24. Crop of 1856.

IV. HAY.

248. Quantity unlimited, and quality excellent. The prairies for hundreds of miles, through which Red River, Assiniboine River, Rat, and Roseau Rivers flow, offer every where a bountiful supply of grass and hay. Hay ground privileges have been established in both of the larger rivers, and the right of making hay within particular limits is recognized by the inhabitants.

Specimen No. 18, shows hay drawn from Mr. Gowler's stacks in the Assiniboine.

V. HOPS.

249. These grow every where, wild, and with the greatest luxuriance in Assiniboia.

Specimen No. 19, shows hops from the banks of Assiniboine.
" 20, " hops from Red River crop of 1856.
" 25, " hops from Red River crop of 1857.

VI. PEAS.

250. Grow well, and yield abundantly.

Specimen No. 32 was taken from one bushel which was supplied for household use. October 2nd, 1857.

VII. TOBACCO.

251. Is cultivated to a small extent, but from trial of the qualities, I infer that it is susceptible of great improvement in the manufacturing process to which it is subjected. The season is, perhaps, too short for it to acquire maturity, and produce a good article.

VIII. POTATOES.

252. Assiniboia is particularly distinguished for the abundance, size and quality of its potatoes.

IX. TURNIPS, BEETS, ETC.

253. All kinds of root crops grow well, and attain large dimensions. All common garden vegetables, which are cultivated in Canada, are equalled, if not surpassed by the productions of the rich prairie soil of Assiniboia.

X. SUGAR.

254. Considerable quantities of sugar are made from the ash-leaved maple on the Assiniboine. As no care is taken of the trees furnishing this useful article, it is probable that the supply from this source will soon cease. In cutting wood for fuel, the "natives" do not seem to have any special regard for the valuable trees.

XII. FLAX AND HEMP.

Formerly much cultivated. Reason for neglect of Flax and Hemp.

255. Some years since, at the instance, it is stated, of Sir Geo. Simpson, flax and hemp were cultivated to a considerable extent by the settlers at Red River. The product was of excellent quality, and gave every promise of furnishing very valuable commodities for home manufacture, and for exportation. The cultivation of these important crops was stimulated for a few years by premiums given by the Hon. Hudson's Bay Company, but when the premiums were withdrawn the cultivation soon ceased. Many settlers with whom I conversed had grown both of these vegetables, but that universal complaint, the want of a

market, or of machinery to work up the raw product led them to discontinue this very important and profitable branch of husbandry.

XII. LUMBER.

Timber found only in narrow strips on the rivers. Ridges afford aspen. The Winipeg might furnish lumber.—Fuel necessary.—Settlers anxious to find coal. A supply of fuel necessary for the progress of the settlements.

256. Timber fit for lumbering purposes is only found in narrow strips, on the Red and Assiniboine rivers, and in still less quantities on the Roseau and Rat rivers; the timber consists of elm, oak, maple, and poplar of very large growth, as is recorded elsewhere. Poplar exceeding 4 feet in diameter, elm exceeding 3 feet, and oak of very large dimensions, are the prevailing forest trees; but if the settlements progress, and why should they not? these supplies will soon be consumed. The ridges afford small aspen and pine; it is stated, too, that back of the great ridge, on the east side of the Red River, good pine is to be found towards the Lake of the Woods; the Winipeg would doubtless furnish some good pine, but the difficulty would lie in bringing it up Red River, in its unmanufactured state. Saw-mills are unknown in the settlement, but the rapids of the Winipeg could afford any required power there. The question of a supply of timber for building purposes is not so important as the requirements of the same material for fuel; hence it is that those who interest themselves in the future of Red River are anxiously turning their inquiries in the direction of the upper Assiniboine and the little Souris, to those beds of lignite or tertiary coal which are so often spoken of by the Buffalo hunters who have occasion to cross these rivers in their progress to the high prairies. Fuel of some description, whether obtained from the Assiniboine, the little Souris, or the Saskatchewan, is absolutely essential to the progress of settlement in Assiniboia; the wooded ranges on the shores of Lake Winipeg and on the ridges might afford a supply for some years; but, without a more hopeful prospect of obtaining fuel on the banks of some of the rivers enumerated, the future of Red River settlements can

never acquire that prominence and importance which may otherwise belong to them.

LIVE STOCK.

Live Stock.—Sheep diminishing.—Loss of animals during the winter.

257. The live stock of the settlement are represented by 2,799 horses, 2,726 oxen, 3,883 cattle, 2,644 calves, 4,674 pigs, and 2,429 sheep. Since the census of 1849 an increase has taken place in all of the foregoing items, with the exception of sheep: this useful animal appears to be fast diminishing at Red River, and little wonder, when only one carding mill, and that not in operation, as I was informed, exists in the settlement. In 1856 there were 667 fewer sheep in Assiniboia than in 1849, and 1,130 less than in 1843. This decrease is very much to be lamented; it is said to arise from the want of a market for the wool, or means to manufacture it in the settlement. During the winter of 1855–6, the number of animals lost will be seen by an inspection of Table No. 2 at the close of this chapter. The entire number amounted to 184.

AGRICULTURAL IMPLEMENTS.

Agricultural Implements.—Red River Carts.—Admirable fitness of these Carts.

258. The agricultural implements are English and American ploughs, of which 585 are now to be found in the settlement. These are valued at £4 10s. sterling each; 730 harrows, eight thrashing machines, two reaping machines, and six winnowing machines. Produce is hauled in the celebrated Red River carts, which are admirably constructed throughout of wood; no iron is employed, but sometimes buffalo-hide is made to serve as a tire; these carts will last for several years; and one which conveyed some heavy boxes of mineralogical specimens from Red River to Crow Wing, last autumn, had previously been twice to near the foot of the Rocky Mountains, and was still in good condition.

The prairies offer great advantages for rearing stock.—No market for beef, mutton tallow, hides, &c.—Cattle might supply the place of buffalo.—Reasons for the neglect of stock raising.—Buffalo meat, pemican, robes, &c., always a cash article; beef, &c., drugs.—Habits of the half-breeds.—The introduction of the European and Canadian element would soon change the state of things.—Opinion of many at Red River.—Red River will become a great grazing country when the Fur trade relinquishes its influence.

259. The vast prairies of Red River and the Assiniboine, clothed with a rich profusion of most nutritious grasses, offer unrivalled advantages for rearing stock. The introduction of mowing machines would enable the settlers to lay in any required quantity of hay for winter consumption. Few of the better class of farmers keep more than thirty or forty head of cattle, in consequence of the want of a market for beef, tallow, hides, &c. The answer I received on all hands to the question, "Why do you not raise more cattle?" was always the same in substance: "Find us a market for beef, tallow, and hides, and we will soon furnish any quantity of cattle you may require." There does not appear to be any good reason why sheep and cattle should not supply the place of the buffalo; the experience of many years shows that no physical impediment arising from climate or soil exist to prevent the prairies of Red River from becoming one of the greatest grazing countries in the world. Two reasons for the neglect of this important branch of industry are soon apparent even to a stranger at Red River. Buffalo meat, and pemican made from buffalo meat, together with the robes and fine feet, are always a cash article at the Hon. Company's stores; whereas beef, mutton, hides, tallow, and wool, are a mere drug in the market; again, the habits of the half-breeds, who have long been trained to the hunt, are opposed to the quiet monotony of a pastoral life. Introduce the European or Canadian element into the settlement with the simple machinery they have been accustomed to employ in the manufacture of homespun, and in a very few years the beautiful prairies of Red River and the Assiniboine would be white with flocks and herds, and the cattle trade already springing into importance between the settlements and St. Paul's, either largely increase, or without much difficulty be diverted into an

easterly channel: such are the ideas of many with whom I discussed the subject when in the settlements, and my own observations lead me to the opinion that no real difficulty exists in the least degree likely to hinder Red River from becoming a grazing country of the first class, when other interests shall be permitted to exist in the presence of that all-absorbing, all-controlling service—the Fur Trade.

CHAPTER III.

Religion and Education.—Religious demonstrations in Red River; Families and churches, 260 — Statistics and enumeration of schools, 261 — Statistics and enumeration of churches, congregations, ministers, stipends and means of support, 262.

One Church of England, two Presbyterian, three Roman Catholic, 262 — St. John's Church, St. Andrew's Church, the Parsonage House, St. Andrew's Parochial school, 263 — The Indian church, Indian school, 264 — The Rev. Mr. Cowley; novel Indian night bell, 265 — Contrast between the christianized Indians and the heathens; Dog feasts within a mile and a half of Christian congregations, 266 — Peguis, 267 — Baptisms at the mission, 268 — Prairie Portage, 269 — Mixed congregation at Prairie Portage, how clothed, 269 — Congregations at Red River; Indications of wealth among the congregations, 270; The Presbyterian church and manse, 271 — The Roman Catholic church at St. Boniface; sweet toned bells, 272 — Convent and garden, 273 — Roman Catholic and Protestant parishes, 274 — Admiration felt at the extent of the Home charities; Nineteen clergymen of the Church of England sustained in Rupert's Land by the Home Societies; little done by the inhabitants for the support of clergy, &c.; Difficulty of the question, church services conducted in the English tongue; Missionaries should be independent, 275 — Charges to missionaries for freight in 1854 and in 1856, 276.

RELIGION AND EDUCATION.

Religious denominations in Red River.

260. There are three religious denominations in Assiniboia—Church of England, Presbyterian, and Roman Catholic. In the census of 1843 and 1849, two divisions only were recognized—Protestant and Roman Catholic—and the numbers of members were stated to be 2798 Roman Catholics and 2345 Protestants. In 1849 the Episcopalian families were stated to number 539, and the Roman Catholic families 518. In 1856, a division in the enumeration of the Protestant element was made, probably on account of the advent of a Presbyterian Minister, who responded to the call of a numerous body belonging to that denomination, yet in the absence of a minister formerly enumerated

with the Episcopalians. Last year the census, according to Religions, stood thus:—

Families and Churches.

Roman Catholics,	534	families,	with	8	churches.
Episcopalian,	488	"	"	4	"
Presbyterian,	60	"	"	2	"

The settlement at Prairie Portage, and the Indian Missionary Village, are not included in this enumeration. In addition to the churches enumerated, services are performed in two or three school-houses, which, on that account, are classed with churches in the census tables, but which ought evidently to be preserved separate.

261. There are seventeen schools in the settlement, generally under the supervision of the ministers of the denomination to which they belong. The following enumeration is nearly accurate:

Statistics and enumeration of Schools.

1. St. John's College, including a boarding school for boys and girls, under the immediate suspervision of the Bishop of Rupert's Land.
2. Archdeacon Hunter's Parochial School, conducted by Mr. Mayhew, recently from the Normal School, Dublin.
3. Mr. Gunn's Commercial Boarding School, more particularly in connection with Presbyterians.
4. The Reverend Mr. Taylor's Parochial School on the Assiniboine.
5. The Reverend Mr. Chapman's School, near the middle settlement.
6. The Presbyterian School under the superintendence of the Revd. Mr. Black.
7. Three minor schools under the supervision of the Episcopal Ministers in different Parishes.
8. The Roman Catholic Seminaries, two in number, one of them occupying a very spacious and imposing building, near the Church of St. Boniface, and providing ample accommodation for female boarders. At the Indian Missionary Village, an excel-

ent school is under the control of the Revd. Mr. Cowley. All f the foregoing establishments are independent of the Sunday Schools in connection with the different churches.

Statistics and enumeration of Churches, Congregations, Ministers, Stipends, and means of support.

262. The following is a table of the Missionaries, Stations, Congregations, Income and sources of Income, belonging to the Church of England in Assiniboia :—

	Missionaries.	Stations.	Congregations.	Income.	Sources of Income.	Remarks.
				Sterl. £		
1	The Right Rev'd the Lord Bishop of Rupert's Land.	*Red River.* St. John's.........	500	700	£300 Hon. Hudson's Bay Company. £400 funded property.	
2	Rev. T. Cochrane	....	....	100	Society for Propagation of the Gospel.	
3	Rev. J. Chapman..	St. Paul's	300	200	£150 Hon. Hudson's Bay Company. £50 the Bishop.	The Hon. Co's Chaplain.
4	Rev. Arch. Hunter	St. Andrew's ...	1200	250	Church Missionary Society.	
5	Rev. W. W. Kirkby	....	....	200	....	Curate.
6	Rev. A. Cowley ...	Indian Settlement.	600	200	....	Indian Missionary.
7	Rev. W. H. Taylor	*Assiniboine River.* St. James.........	250	200	£100 Society for Propagation of the Gospel. £100 Bishop.	
8	Rev. Ar. Cochrane	Portage la Prairie.	200	200	Church Missionary Society.	
		PRESBYTERIAN CHURCH.				
	Rev. Mr. Black ...	***Red River.*** **Middle Settlement.**	**400**	**150**	**£50 Hon. Hudson's Bay Company.** **Remainder by the congregations.**	
		ROMAN CATHOLIC MISSIONS.				
	The Right Rev'd the Lord Bishop of the North West, and 5 to 7 Clergy.	*Red River.* St. Boniface ...	1500	....	£100 from the Honble. Hudson's Bay Co.	A spacious Nunnery & Schools attached.
		St. Norbert. De la Rivière Salle.	Inclu in the above.			
		Assiniboine River. St. François Xavier.	1000	....	....	A Nunnery attached.

St. John's Church.—St. Andrew's Church.—The Parsonage House.—St. Andrew's Parochial School.

263. St. John's Church is in a very unstable condition, the walls being supported with wooden props. A large quantity of stone is now lying near it for the construction of a cathedral which is estimated to cost £5000 sterling. St. Andrew's Church, called also the Rapid's Church, is a new and very substantial structure of stone, well buttressed, and very conveniently and neatly furnished: all its interior arrangements are attractive and substantial. It is surrounded by a thick stone wall enclosing a capacious church yard. The Parsonage house, also recently completed, is in every respect fitted for the severities of the winter climate of the country. The size is 50 feet by 30, and two stories high; the walls, of limestone, are two feet eight inches thick, the rooms lofty and capacious, and in its internal arrangements it leaves nothing to be desired. The Rev. Mr. Kirkby's house is also roomy, and no doubt very comfortable, but its architectural points are far from being attractive. The School house of Word is admirably arranged, and in it I saw sixty children pursuing their studies under the instruction of Mr. Mayhew, lately from Dublin, with a decorum and attention very rarely to be found in the primary schools of this or the European Continent.

Indian Church.—Indian School.

264. The church at the Indian Settlement is also a new and spacious building of stone, with a wall of the same material enclosing the church yard, in which is a wooden school house.—Here also I saw about fifty Ojibway Indian young men, young women, and children, receiving instructions from the Rev. Mr. Cowley, Mrs. Cowley, and a native school master. The young Indian women read the testament in soft, low voices, but with ease and intelligence. During service (Sunday, October 4th) the church was about three-fourths full. The congregation appeared to be exclusively Indian; in their behaviour they were most decorous and attentive. The singing was very sweet, and all the forms of the service appeared to be understood, and prac-

ticed quietly and in order by the dusky worshippers. A seraphino, played by Mrs. Cowley, accompanied the singers; the responses were well and exactly made, and the utmost attention was given to the sermon. The prayers were read in English, the lessons in Ojibway, and the sermon in Cree. After service an Indian child, neatly dressed in white, was baptised. A few of the women and girls wore bonnets, but the greater number drew their shawls over their heads.

Rev. Mr. Cowley.—Novel Indian Night Bell.

265. The minister and congregation suffer under the mutual disadvantage of being in great part separated by the river. The settlement is chiefly on the left, the church, school, and parsonage on the right bank of the river. A good scow, which will probably soon be procured, would enable the congregation to cross with ease. The Rev. Mr. Cowley enjoys no sinecure,—he is not only missionary, but the doctor, magistrate, and arbitrator of the settlement. During my short visit of a day and a half, he was sent for three times to visit sick children, and he says that when the Indians require his services during the night, they come into the parsonage, the door of which is never locked, and tap gently at the stove-pipe, which passes from the sitting room into his bedroom above, to arouse him. They agreed among themselves that they would adopt this novel kind of night bell, and he has never known them to endeavor to call him after retiring to rest in any other way: they open the outer door and steal without the slightest noise, in the darkest night, to the well known stove-pipe, give two or three low Indian taps, and quietly await the result.

Contrast between the Christianized Indians and the Heathens.—Dog feasts within a mile and a half of Christian Congregations.

266. A wonderful contrast do the subdued Indian worshippers in this missionary village furnish on Sunday, to the fiendish revellers on the open prairie, who perform their disgusting heathen ceremonies within a mile and a half from some of the christian altars of Red River. On two Sundays during my stay,

at the time when Divine service was being celebrated in all the churches of the settlement, the heathen Indians held their dog feasts and medicine dances on the open plain. In one instance five dogs were slaughtered, cooked and devoured; in another instance three,—the evil spirit was invoked, the conjuror's arts used to inspire his savage spectators with awe, and all the revolting ceremonies belonging to the most degraded heathen superstition practised within a mile and a half of the spot where the stones are now gathered for the Bishop of Rupert Land Cathedral, and about the same distance from two capacious churches, Protestant and Roman Catholic, where Divine service was at the same time being solemnized to orderly resident congregations.

Peguis.

267. I was introduced to Peguis, the great Salteaux Chief, who at one time commanded three hundred warriors. He is now a quiet old man, a good christian, and happy, as he states, in this belief.

Baptisms at the Mission.

268. Up to the day of my visit, October 4th, there had been fifty-one baptisms, exclusively Indian, in Mr. Cowley's mission, during 1857; and in the same period, twenty-six deaths, six of whom were adults. The population of the mission in 1855 was 473 baptised Indians, and 203 heathens; four adult baptisms were celebrated in 1855.

Prairie Portage. Mixed Congregation at Prairie Portage.—How Clothed.

269. We now proceed to the Rev. Archdeacon Cochrane's church at Prairie Portage. It is constructed of wood, and contains twenty or thirty very substantial family seats, but capable of holding two or three times that number, each of which is manufactured by the owner, according to a pattern supplied by the Archdeacon. The congregation (Sunday 13th,) was composed of Plain and Swampy Cree Indians and half-breeds: one Plain Cree woman's home was 300 miles to the west; she was a fine specimen of the race, and neatly habited in the dress of the

half-breeds. Near the door of the church, inside the building, a number of heathen Indians from the prairies stationed themselves to indulge their curiosity: they remained quiet and grave, squatted on the floor, and conducted themselves with the utmost propriety during the service; they were Plain Crees, followers of the Buffalo hunters, with whom they had lately arrived from the high prairies; some were clothed in dressed skins, others robed in blankets, with neck and head decorations, and one young heathen girl, wild, and almost beautiful, triumphed in the splendor of a robe of scarlet military cloth. Who can say what benign influence the sight of christian worshippers may have upon many of these savage children of the prairies, who saunter in during the services of the church, and with characteristic decorum always maintain a respectful demeanor, and grave and earnest look.

Congregations at Red River.—Indications of wealth among the Congregation.

270. The churches in the settlement which I attended were St. John's and St. Paul's. The congregations consisted of resident and retired officers of the Company, some merchants, farmers, and the natives or half-breeds of the respective parishes. The services were conducted in strict accordance with the customary forms, and the demeanor of the congregation was most attentive and decorous. I remarked that a fair proportion of the congregation came to and went from church in neat carriages, or on horseback, and the external appearance of the assemblage, taken on a whole, in relation to dress, was superior to what we are accustomed to see in Canada, or in the country parishes of Great Britain. The young men wore handsome blue cloth frock coats, with brass buttons, and round their waist a long scarlet woollen sash.

The Presbyterian Church and Manse.

271. The Upper Presbyterian Church is a neat building of stone, situated in the middle of the settlement. The cost of its erection exceeded £1,000, sterling, and it has sittings for 500. The manse is delightfully placed on the river bank,

which here slopes uniformly to the water's edge from the great prairie level, some thirty feet above the river at the time of my visit. The Rev. Mr. Black has also a service in the lower settlement, in a church which I had not the opportunity of visiting.

The Roman Catholic Church of St. Boniface.—Sweet toned bells of St. Boniface.

272. By far the most imposing ecclesiastical building in the settlement is the Roman Catholic Church of St. Boniface, near Fort Garry. The external appearance is neither pleasing nor tasteful, although at a distance the two tinned spires glittering in the sunlight give an imposing appearance to the building. They can be seen from a great distance, and with the spire of St. James' Church on the Assiniboine, are well known land marks. The internal decoration of St. Boniface, for so remote a region, are very striking, and must necessarily exercise a potent influence upon the large and singular congregation who worship every Sunday within its walls. Two or three very sweet toned bells ring at matins and vespers, and to a stranger just arrived from a long journey through unpeopled wastes, no sight or sound in Red River creates such surprise and melancholy pleasure as the sweet tones of the bells of St. Boniface, breaking the stillnes of the morning or evening air.

Convent and garden.

273. Near the church is a very spacious convent, having in front an extensive and well-cultivated garden, stocked with all kinds of culinary vegetables.

Roman Catholic and Protestant parishes.

274. There is a distinct and well preserved difference in faith between the population of the different parishes into which the settlements are divided. Some are almost exclusively Protestant, others equally Roman Catholic. In the Parish of St. Norbert de la Rivière Sal, there is not one Protestant family, but 101 Roman Catholic families. In the Parish of St. Boniface, there are 178 Roman Catholic families

against five Protestant; so also in the Parish of St. François Xavier, on the Assiniboine, there are 175 Roman Catholics to three Protestant families. On the other hand, in the Parish of St. Peter's, there are 116 Protestant against two Roman Catholic families, and in the Parishes of Upper and Lower St. Andrews, there are 206 Protestant against eight Roman Catholic families.

Admiration felt at the extent of the Home Charities.—Nineteen Clergymen, Church of England, sustained in the Honourable Hudson's Bay Company Territory by Home Societies.—Little done by the inhabitants for the support of the clergy and the maintenance of schools, or to the Christianizing of the Indians.—Difficulty of the question.—English Church Services all conducted in the English tongue.—Means of communication with the Indians exist only to a very small extent.—The reception of stipends from Hudson's Bay Company necessarily cramps the action of the Missionaries.—Missionaries should be independent.

275. A very short stay in Red River is sufficient to create both admiration and surprise at what may not be inaptly termed, the condition of religion in Assiniboia. Admiration is aroused by the extent and design of the charities of the different societies in England, who sustain such a large ecclesiastical corps in connection with the Church of England, as resident missionaries in the settlement, and who have contributed very munificently to the erection of the excellent churches which are now constructed; and in addition to these demands upon their liability, give large sums towards the maintenance of missions in different parts of Rupert's Land, so that at the present time there are scattered over this immense country nineteen clergymen of the Church of England, costing between £6,000 and £7,000 sterling, annually. The Church Missionary Society have expended up to the date of their last report, very nearly the sum of £50,000 sterling upon missionary operations in Rupert's Land. But surprise is created that while so much is done by those in England, for charity's sake, so little is contributed by the wealthy residents of Red River (the retired factors of the Hudson's Bay Company, the merchants, traders, and better class of farmers)

towards the maintenance of the clergy, the support and extension of schools, and to the christianizing of the heathen indians, whose medicine drum, accompanying the monstrous song of the conjuror, can almost always be heard in summer during the hours of service. Two-thirds of the salary of the Presbyterian minister is paid by his congregation, and the outward appearance of the congregations of the Episcopal churches, coming and going, as many of them do, in neat little carriages, or on horseback, from comfortable well-furnished homes, would enforce the expectation that in proportion to their means, they should at least endeavour to prepare the way for the spread of Christianity among the thousands of heathens, who, in the course of a year, frequent the settlement. In the present condition of the country, with the interest of the fur trade to be upheld, this question is full of difficulty. The Indians must be accustomed to settle in one place for a few months of the year at least; schools must be founded and young children taught the truths of Christianity; missionaries must learn the Indian language; and then the spread of Christianity among the heathens may be in some degree commensurate with the charity which animates the different supporting societies in Great Britain and Ireland. In the settlements at Red River, and on the Assiniboine, all the services are conducted in the English tongue, and among the clergy of the Church of England at Red River, but one only speaks one Indian language with the fluency and ease necessary to make himself understood by the natives. Of course the Indian Mission below the settlements is not included in this enumeration. The Honorable Hudson's Bay Company continue to be very liberal in their support of missionaries as far as money is concerned: their contributions will be seen in the foregoing table; but the impression was irresistibly forced upon me, and I found it strongly felt by some residents in Red River, that the progress of Christianity among the Indians would be rather aided than otherwise, if missionaries were not to receive any assistance in the form of an annual stipend from the Honorable Hudson's Bay Company. Perfect freedom of action in inducing Indians to settle; in the education of Indian orphan children; and in teaching them, and adults, the blessings of a settled civilized Christian home, as opposed to a savage heathen hunter's life, are essentially necessary before satisfactory progress can be made. Can the ministrations of the church in the English tongue to orderly resident congregations of European, Canadian, or half-breed origin, be missionary labor in the sense in which that highest of all duties is understood by those who seek to spread the truths of Christianity among a most degraded and barbarous heathen race.

276. The following extracts will show that the Honorable Hudson's Bay Company have lately increased their charges to missionaries for freight to the different ports:—

EXTRACT FROM NORTHERN DEPARTMENT—MINUTES OF COUNCIL.

Whereas the great increase in the number of missions dependent on the Company for supplies, renders it necessary to establish a special tariff for such supplies, which, while it protects the Company from actual loss, shall be as little burden to the mission as possible; it is resolved

277. That commencing with outfit 1855, the following prices to be chargeable on imported goods supplied to missions in the various districts of this department. The prices at the inland districts covering freight and charges from the depôt, the advance being calculated in the net English prices, after deducting all charges, viz:

Charges to Missionaries for freight in 1854.

At York	75
Norway House and Cumberland District	80
Lac La Rouge, Swan River, Saskatchewan and English River	90
Arthabaska and McKenzie's River	100

78. That Missionaries at inland districts who require supplies, hand a list thereof to the officer in charge of the district in autumn, in sufficient time for him to make arrangements for procuring them from the depôt, and providing the necessary freight inland the following season.

COPY OF THE RESOLUTION OF COUNCIL FOR THE NORTHERN DEPARTMENT OUTFIT FOR 1856.

Charges to Missionaries for freight in 1856.

That the 74th Minute of Council of 1855 be rescinded, and that commencing with October, 1856, the following tariff be employed for sales to Missionaries:

	Y.	N.	Ho.	Cum.	Lac La Pluis Saskatche'n. Swan river. English do.	Attr'd McK. riv.
Iron works, sugar, shot, and gunpowder on net prime cost......	pct. 75	pct. 90		pct. 100	pct. 100	pct. 133⅓
Country made articles in depôt cost.........	25	33⅓		50	60	80
All other goods on net prime cost............	75	80		85	90	100

Exceptions:—Tobacco, liquors, and other articles at fixed pric to remain as at present.

CHAPTER IV.

Trade and Occupations.—No distinct branch of trade exists in the settlement; Grindstone imported, 276 — Windmills and watermills; Articles of pottery imported, 277 — Growing trade between the settlement and St. Pauls. Caravan met on the road to St. Pauls, 277 — Caravan of nine carts; alcohol imported, whisky imported, 278 — Caravan of six carts; of sixteen carts; of thirty carts, 279—Merchants import from England, 280—Freighters, 281 — Sir George Simpson on the employment of Indians by freighters in 1844, 282.

Tenure of Land.—Land sometimes sold, title in form of a lease; conditions of sale; Purchaser cannot sell or let land without the permission of the Company, 283 — Many settlers do not possess a lease, 284 — No title to show, 284 — Company's register; curious titles to farms, 285 — Squatters on Red River; no payment for land contemplated, 286.

Census Tables.—No. 1, population; No. 2, dwellings, live stock, &c.; No. 3, value of dwellings; No. 4, value of implements, &c.; No. 5, Census according to parishes; No. 6, do do; No. 7, Courts, offences, &c.

TRADE AND OCCUPATIONS.

No distinct branch of trade exists in the settlement—Grindstones imported.

276. I inquired of Mr. Smith, under whose superintendence the census was taken, why no enumeration of trades and occupations was introduced into the census roll, and I was informed that no kind of industry or a distinct trade or occupation existed in the settlement. Almost every man was his own wheelwright, carpenter, or mason; carpenters, blacksmiths, masons, &c., could be found, but they were also engaged in other occupations, either as small farmers or hunters. Mr. Smith did not think that one man could be found in Assiniboia who pursued any particular trade or limited his industry to one special branch. The present condition of the settlements would not, it was thought, afford a living to any distinct class of artificers. A horse shoe imported from England could be purchased as cheap as the unmanufactured iron required to make one; every article, no matter of

what description, was imported in its manufactured condition. Even the ponderous and unwieldy grindstone was conveyed across the portages from Hudson's Bay, although material well adapted for grindstones existed on the shores of Lake Winipeg, not one hundred miles from Red River. Grindstones had, I was informed upon authority I could not doubt, been made from the rock in question, and brought to the settlement, but they could not compete commercially with those imported by the Honorable Hudson's Bay Company, which, for a time, were sold little above cost, even after their long and expensive journey.

Windmills and Watermills—Articles of Pottery imported—Growing trade between the settlements and St. Pauls—Caravans on the road to St. Pauls.

277. Sixteen windmills and nine watermills represent the mechanical force employed in preparing food. I did not see, nor did I hear of a saw mill, boards being prepared by hand; even articles of pottery, notwithstanding their fragile nature, are imported. I did not hear of any articles of that description being manufactured in the settlement. In a word it may be said that trades and occupations, as representing special branches of industry do not exist in Assiniboia. Under the head of merchant-shops, we find no less than fifty-six enumerated in the last census, a heading which it will be observed is not represented in the the census of 1849. In fact the class of merchants, including petty traders, has almost sprung into existence during the last ten years. They obtained their goods chiefly from the States at St. Pauls on the Mississippi, and purchase them in exchange for gold or peltries. As this trade with the United States is fast growing into importance, and from the immense extent of frontier not easily checked by fiscal regulations, and as its continuance must affect to a most serious extent the position of the Honorable Hudson's Bay Company in the valley of Lake Winipeg, I thought it worth while to pay especial attention to the caravans, which were met upon the road from St. Pauls to Red River, and to note, when possible, the character of the supplies they were conveying.

Caravan of Carts.—Alcohol and Whiskey imported.

278. Near Turtle Creek in Minnesota, on Friday, October 16th, met a caravan of nine carts going to Red River settlement from St. Pauls. Their freight consisted of one large box of books for the Roman Catholic mission, a mowing machine, a fifty gallon barrel of alcohol, numerous kegs of whiskey, some kegs of gunpowder, a cooking stove, some hardware and dry goods in boxes and cases for trading purposes. The cask containing alcohol was branded as such, with the maker's name, so also were the whiskey kegs.

Six Carts.

279. Saturday, October 17th, met a caravan of six carts from St. Pauls, bound for Red River settlement; they were the property of the drivers who belonged to the class of petty traders. Their goods consisted of ploughs, stoves, whiskey, dry goods, scythes, &c. This was their second trip this summer.

Caravan of sixteen Carts.

Tuesday, October the 20th, met a caravan of sixteen carts from St. Pauls, bound to St. Joseph's, on the 49th parallel, laden with sugar, powder, and dry goods, for trading purposes.

Caravan of thirty Carts.

Between Crow Wing and St. Pauls, met two caravans containing in all thirty carts, bound for the Red River. Their contents could not be seen. They were covered with buffalo robes or oil cloth.

Merchants import from England.

280. Some of the merchants at Red River import largely from England by the Company's vessels, and almost any article of common necessity or ornament, can be procured at the stores, which, by the way, are of the rudest description, without the least pretensions to display the wares, but rather showing an endeavor to conceal from outward view whatever goods they may contain.

Freighters.

281. Besides being merchant or trader, in the ordinary acceptation of the term, some of them are freighters, conveying goods between Hudson's Bay and the Valley of Lake Winipeg. They employ Indians and half breeds to row their boats of 3 to 5 tons burden, and haul them and their freights over the portages. Fifty-five of these boats are enumerated in the census as belonging to Red River, but whether the Hudson's Bay Company's fleet is included in the number is not stated. The employment of Indians by the freighters, has, at times, given rise to some little difficulty between them and the Honorable Hudson's Bay Company, as introducing a species of industry not compatible with a hunter's pursuit, and likely to divest attention from the great objects of the fur trade.

282. Among numerous documents, which are in the possession of many of the most respectable people of Red River, treasured up, perhaps, as memorials of by-gone, but not forgotten difficulties, in gaining a livelihood by pursuits not connected with the fur trade or its interests,—the following brief note, may, or may not possess some little historic interest, and if rightly understood and interpreted, offer a clue to the present condition of the Red River settlements, and of the Indian missionary stations.

Sir G. Simpson on the employment of Indians by freighters, in 1844.

FORT GARRY, June 5th, 1844.

SIR,—I am informed that private freighters from Red River, frequently employ and afford passages to Indians along the line of communication to York Factory in their boats, which is highly objectionable in many points of view. I have therefore to desire you will not in future receive as passengers, or employ Indians in your craft, on the line of communication between York and Red River.

I am, sir,
Your obedient humble servant, &c.
(Signed,) G. SIMPSON.

Mr. Edward Mowat,
&c., &c., &c.

Copied, 30th July, 1844.
(Signed,) A.

TENURE OF LAND.

Land sometimes sold.—Title given in the form of a lease.—Conditions of sale.—Cannot sell or let their land without the permission of the Company.

283. Land in Assiniboia is sometimes sold to purchasers at the rate of 7s. 6d. sterling per acre. The title is conveyed under the form of a lease for 999 years. The conditions in the lease are, 1st, that one-tenth of the land is to be brought into cultivation within five years; 2nd. That trading or dealing with Indians or others, so as to violate the chartered privileges of the Company, be foresworn; 3rd. Obedience to all laws of the Company; 4th. Contributions to expenses of public establishments in due proportion; 5th. All trade or traffic in any kind of skins, furs, peltry, or dressed leather, except under license of the Company, forbidden; 6th. Land not to be disposed of or let, or assigned without the consent of the Company. These are the main features of the lease, the document is long, otherwise it would have been inserted in full.

Many settlers do not possess a lease.—Many settlers in occupation of land, have no title to show.

284. It is necessary here to remark that I did not see this lease in the hands of any one of the settlers of whom I made inquiries respecting their tenure. I heard of its existence, and saw a copy, through one of the resident clergy, but in no single instance could I find any half-breed, in possession of a farm, acquainted with its existence. In very many instances the settlers did not know the number of their lots, and had no paper or document of any kind to show that they held possession of their land from the Company, or any other authority. These inquiries were necessary for the purpose of ascertaining the exact position of a line of section across the valley of Red River, which I caused to be made for the purpose of ascertaining the level of the swamps, &c. The required information was obtained through Mr. Smith, the Clerk of the Council, but from the people themselves no information of the kind could be obtained. They knew that they had paid a certain sum for their land, or it had been given them in return for services, or that they had squatted upon it, and that they were now in possession, but of title-deeds

or receipts they knew nothing. These remarks refer only to those from whom the information was sought for the purposes mentioned above.

Company's Register.—Curious Titles to Farms.

285. I had an opportunity of seeing and examining the Company's record of land sales, and presents of land to different individuals for services performed, being in fact the register of the settlements on Red River and the Assiniboine. In general the price per acre was attached to each record of sale or transfer, but in some instances rather curious titles to farms were recorded, two of which I have thought it might be interesting to re-produce.

Copy.

On Plan		Prairie. Acres. Rods. Poles.	Wood 0	Total
27.	George Taylor, (deceased)	86. 2. 7	" " "	86. 2. 7

Granted him for past services, as per order from Sir George Simpson, 9th July 1849.

Sold to John Flett, Blacksmith.

		Prairie	Wood	Total.
287.	Richard Daigneau	56. 1. 8	14	70. 1. 8

Note signed by Governor Simpson, putting him in possession of 50 acres of land, or 3 chains frontage on the west side of the main river, free of cost.

Squatters on Red River.—No payment for land contemplated.

286. When passing from Fort Garry towards the 49th parallel with a view to explore the Roseau River, our guide pointed out a number of hay stacks occupying a delightful bend on the west side of Red River, about 25 miles from the settlements; he informed us that the hay stacks were made by himself and some friends, a few weeks ago, and that they intended to "move there" during the winter and form a new settlement. I inquired how much he had paid for his land; the reply was, "Nothing; we are not required to pay anything for land beyond the present limits of settlement on the river." I may add that many hundred thousand acres of land, which cannot be surpassed for fertility, rich prairie mould from 18 inches to 2 feet deep lie free and unoccupied on the banks of Red River and its tributaries, inviting settlement.

A Statistical account of Red River Colony, taken on the 20th to the 24th May, 1856.

Year.	Number of Families.	Age.									Religion.			Country.							Population.								Total.		
1856.	Average 6 $\frac{31}{1082}$ per family.	From 18 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	From 80 to 90.	From 90 to 100.	Episcopalian.	Presbyterian.	Catholic.	England.	Ireland.	Scotland.	Canada.	Norway.	Rupert's Land.	Switzerland.	Men.		Women.		Sons.		Daught's		Males	Fe-males	Total.
																					Married.	Unmarried.	Married.	Unmarried.	Above 16.	Under 16.	Above 15.	Under 15.			
1856......	1082	5	243	276	220	153	85	58	15	4	488	60	534	40	13	116	92	1	816	2	986	237	992	298	521	1481	451	1557	3225	3298	6523
1849......	1052	...	240	252	227	170	92	37	14	...	539	...	513	46	27	129	161	3	684	2	873	145	877	135	382	1314	373	1292	2714	2577	5291
Increa'e	30	5	3	24	...	...	...	21	1	4	...	60	21	...	...	...	...	...	132	...	113	92	115	163	139	67	78	265	511	721	1232
Decre'se	...	...	...	...	7	17	7	...	...	...	51	51	...	6	14	13	69	2	...	...	...	...	...	...	...	...	...	...	...	...	...
*1843...	870	......	......	......	......	......	......	......	......	......	23 Pro ant vid	45 test indi uals	2798 R.C indi vid- uals	22	5	110	152	...	571	2	......	......	......	......	......	......	......	......	......	......	5143

*The census for this year, given above, is abstracted from the journal of the Bishop of Montreal, published in 1845, Mr. Smith not having the census for the year 1843 in his possession. H. Y. H.

TABLE No. 2.

Statistical account of Red River Colony.—(*Continued.*)

Year.	Dwellings.			Live Stock.								Implements.					Land.	Machinery.						Public Buildings.				Loss of animals during winter of 1855-6.						
	Houses.	Stables.	Barns.	Horses.	Mares.	Oxen.	Bulls.	Cows.	Calves.	Pigs.	Sheep.	Ploughs.	Harrows.	Carts.	Canoes.	Boats.	Cultivated land at two bushels wheat per acre.	Wind Mills.	Water Mills.	Thrashing Mills.	Reaping Machines.	Winnowing Machines.	Carding Mill.	Churches.	Schools.	Shops, merchants, &c.	Gaol.	Horses.	Mares.	Oxen.	Cows.	Sheep.	Calves.	Pigs.
1856.	922	1232	399	1503	1296	2726	290	3593	2644	4674	2429	585	730	2045	522	55	Acres. 8371	16	9	8	2	6	1	9	17	56	1	16	3	21	16	43	57	28
1849.	745	1066	335	1095	990	2097	155	2147	1615	1565	3096	492	576	1918	528	40	6392½	18	1	...	...	...	...	7	12	...	1	...	...	...	...	...	...	...
Increase..	177	166	64	408	306	629	135	1446	1029	3109	...	93	154	1027	94	15	1978½	...	8	8	2	6	1	2	5	56	...	...	...	...	...	...	...	...
Decrease..	...	...	...	...	...	...	...	...	...	...	667	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1843.	730	1291		821	749	...	107	2207	1580	1976	3569	...	...	...	...	...	...	18	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TABLE No. 3.

Statistical account of Red River Colony.—(*Continued.*)

AVERAGE VALUE OF DWELLINGS, LIVE STOCK, IMPLEMENTS, AND MACHINERY.

Houses.					Stables.		Barns.		Live stock.					
25 Houses at £300 each.	100 Houses at £100 each.	200 Houses at £50 each.	200 Houses at £25 each.	397 Houses at £12 each.	616 Stables at £8 each.	616 Stables at £5 each.	199 Barns at £12 each.	200 Barns at £8 each.	2799 Horses and mares at £8 10s. each.	3016 Oxen and Bulls at £4 10s. each.	3545 Cows at £2 10s. each.	2644 Calves at £1 each.	4674 Pigs at 10s. 6d. each.	2429 Sheep at 12s. each.
£7500 0 0	10000 0 0	10000 0 0	5000 0 0	6764 0 0	4928 0 0	3080 0 0	2388 0 0	1600 0 0	23791 10 0	13572 0 0	8862 10 0	2644 0 0	2453 17 0	1457 8 0

TABLE No. 4.

Statistical account of Red River Colony.—(*Concluded.*)

AVERAGE VALUE OF DWELLINGS, LIVE STOCK, IMPLEMENTS, AND MACHINERY.—(*Concluded.*)

Implements.					Machinery.					
565 Ploughs at £4 10s. each.	730 Harrows at 5s. each.	2045 Carts at 20s. each.	522 Canoes at 12s. each.	55 Boats at £15 each.	16 Wind Mills at £100 each.	9 Water Mills at £150 each.	8 Thrashing Machines at £40 each.	2 Reaping Machines at £30 each.	6 Winnowing Mach'es at £2 each.	1 Carding Mill £35.
£2542 10 0	182 10 0	2045 0 0	313 4 0	825 0 0	1600 0 0	1350 0 0	320 0 0	60 0 0	12 0 0	35 0 0

TOTAL AMOUNT.

Dwellings.	Live Stock.	Implements.	Machinery.	Grand Total.
£49260 0 0	52401 5 0	5908 4 0	3377 0 0	111036 9 0

TABLE No. 5.

CENSUS of the Red River Settlement, taken on the 20th day of May, 1856, according to Parishes.

1856.	Total.	Average	Ages.									Religions.		Country.							Population.								
																					Men.		Women		Sons.		Daughters.		
Names of the Parishes.	No. of Families.	Average per Parish. g. a. $6\frac{121}{1095}$	From 18 to 20 yrs.	From 20 to 30 yrs.	From 30 to 40 yrs.	From 40 to 50 yrs.	From 50 to 60 yrs.	From 60 to 70 yrs.	From 70 to 80 yrs.	From 80 to 90 yrs.	From 90 to 100 yrs.	Protestant.	Catholic.	England.	Ireland.	Scotland.	Canada.	Norway.	Rupert's Land.	Switzerland.	Married.	Unmarried.	Married.	Unmarried.	Above 16.	Under 16.	Above 15.	Under 15.	Total.
St. James	68	$6\frac{34}{207}$	...	8	10	23	23	4	...	...	...	39	29	16	10	6	7	...	29	...	64	19	66	18	23	99	32	93	414
St. John's	81	7	...	7	19	20	15	11	9	...	...	77	4	3	2	39	5	...	31	1	77	45	76	43	51	106	52	117	567
St. Paul's	90	6½	...	14	25	20	14	9	5	3	...	87	3	9	1	29	...	1	50	...	76	26	77	23	50	146	39	148	585
St. Andrew's, Upper	93	$5\frac{89}{93}$	...	14	27	17	20	11	3	1	...	86	7	2	...	23	4	...	64	...	87	17	88	20	50	114	36	142	554
Do Lower	121	$5\frac{48}{121}$	...	26	37	24	17	11	4	2	...	120	1	7	...	16	...	...	98	...	106	29	106	36	57	143	41	135	653
St. Peter's	118	$5\frac{3}{59}$	...	44	25	17	17	6	6	1	2	116	2	1	...	...	...	...	117	...	111	18	111	31	23	133	23	146	596
St. François Xavier	178	$6\frac{33}{178}$	3	42	50	42	16	10	12	2	1	3	175	...	...	1	25	...	152	...	161	32	161	41	101	238	84	283	1101
St. Charles	62	$5\frac{19}{31}$	...	25	16	10	5	3	2	1	...	20	42	2	...	4	2	...	54	...	58	8	58	11	23	85	30	75	348
St. Norbèrt de la Rivière Salle	101	$6\frac{19}{101}$	1	23	28	19	11	12	7	...	...	...	101	...	...	...	16	...	84	1	92	5	92	13	63	148	40	170	625
St. Boniface	183	$6\frac{50}{61}$	1	45	48	29	25	19	10	5	1	5	178	..	...	1	33	...	149	...	167	31	175	49	95	274	183	274	1248
Total, 1856	1095	....	5	248	285	221	163	96	58	15	4	553	542	40	13	119	92	1	828	2	999	230	1010	285	536	1486	562	1583	6691
Total, 1849	1052	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	873	145	877	135	382	1314	373	1292	5391
Increase in seven years	......	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	126	85	133	150	154	172	189	291	1300

TABLE No. 6.

Census of the Red River Settlement, &c.—(*Continued.*)

1856.	Dwellings.			Live Stock.								Implements.					Land.	Machinery.						Public Buildings.			
Names of the Parishes.	Houses.	Stables.	Barns.	Horses.	Mares.	Oxen.	Bulls.	Cows.	Calves.	Pigs.	Sheep.	Ploughs.	Harrows.	Carts.	Canoes.	Boats.	Cultivated, Estimated 2 bush. wheat per acre.	Wind Mills.	Water Mills.	Threshing Mills.	Reaping Mill.	Winnowing Mills	Carding Mills.	Churches.	Schools.	Convent.	Hospital.
																	Acres.										
St. James	70	92	31	80	92	192	9	237	249	360	16	37	35	175	22	10	574	1	2	...	...	...	...	1	1	...	...
St. John's	93	149	57	150	187	504	13	640	583	482	832	73	98	306	47	16	1183	7	1	2	1	5	...	2	3	...	...
St. Paul's	93	181	71	118	126	453	22	528	408	651	579	80	93	222	47	13	1381½	3	2	1	1	...	...	1	1	...	...
St. Andrew's, Upper	102	128	59	39	70	272	13	311	345	502	180	57	77	116	46	10	928	1	...	...	...	...	...	1	2	...	...
Do Lower	104	151	63	65	96	349	16	415	244	694	65	67	99	145	50	1	717¼	2	1	2	...	1	...	...	2	...	...
St. Peter's	117	87	37	21	27	160	8	139	92	155	9	44	39	24	73	3	302¾	2	...	...	...	...	...	1	3	...	...
St. François Xavier	97	99	25	512	257	209	22	316	122	368	9	47	49	483	63	...	582	1	...	...	...	...	...	2	1	...	...
St. Charles	40	60	14	47	65	121	16	218	148	265	56	28	30	102	26	...	375	...	1	...	...	...	...	2	...	...	...
St. Norbert de la Rivière Salle	83	96	9	104	109	169	13	227	278	443	6	49	55	186	62	...	502	...	...	...	...	...	...	...	...	...	...
St. Boniface	134	148	43	239	277	577	14	646	315	1009	484	108	97	349	106	2	2261	1	2	3	...	...	1	1	4	1	1
Total, 1856	933	1191	409	1375	1306	3006	146	3679	2784	4929	2245	590	672	2108	542	...	8806½	17	9	8	2	6	1	11	18	1	1
Total, 1849	745	1066	335	1095	990	2007	155	2147	1615	1565	3096	492	576	1918	428	...	6342½	18	1	...	...	...	...	...	...	...	...
Increase in 7 years	188	125	74	280	316	909	...	1532	1169	3364	...	98	96	190	114	...	2414	...	8	8	2	6	1	4	...	...	...
Decrease in 7 years	...	...	...	...	...	...	9	...	...	...	851	...	...	...	...	...	......	1	...	...	...	...	...	...	...	...	...

(Signed,) WM. R. SMITH.

E. O.

District of Assiniboine, 4th June, 1856.

TABLE No. 7.

Statistical Account of Red River Colony.—(*Continued.*)

COURTS.

Quarterly General Courts, 1855 and 1856.				Total.	Petty Local Courts, 1855 and 1856.																	Total amount of all the 38 cases of Petty Courts for one year.
					Petty Offences.						Debt.											
August.	November.	February.	May.	Number of cases.	Trespass.	Cases of Damage or Misdemeanor.	Hay Ground Privilege.	Assault and Battery.	Defamation of Character.	Total number of cases.	From 1s. to 5s.	From 5s. to 10s.	From 10s. to 20s.	From 20s. to 30s.	From 30s. to 40s.	From 40s. to 50s.	From 50s. to 60s.	From 60s. to 70s.	From 80s. to 90s.	From 90s. to 100s.	Total number of cases.	£ s. d.
No cases.	No cases.	One case.	No cases.	1	2	6	1	1	1	11	4	8	5	4	2	1	...	2	...	1	27	46 13 6

To the Governor and Council of Assiniboia the above statistics are humbly presented by their obliged and obedient servant.

(Signed,) Wm. R. SMITH.

CHAPTER V.

The Half-breed hunters of Red River.—Many of the Half-breeds fast subsiding to the condition of Indians, 287 — The summer hunt of the buffalo, 288 — Improvidence of the Half-breeds, 289 — Politeness of the French half-Breeds, 290 — Kind of aid required to ameliorate their condition, 291.

The buffalo hunters in the field.—The Reverend Mr. Belcourt's description of the condition of some of the Half-breeds, 292 — The buffalo hunters, 293 — Their organization, laws, and regulations, 293 — Power of the Half-breed hunters; their independence, 294 — What is the cause of their decline, 295 — No signs of improvement visible, 296 — This decline observed by the Half-breeds, 297 — Their condition no criterion of the fitness of the country to support a prosperous people, 298.

THE HALF-BREED HUNTERS OF RED RIVER.

Many of the half-breeds subsiding to the condition of Indians.

287. These hardy and fearless children of the prairie constitute a race to which much interest may reasonably be attached. They are endowed with remarkable qualities, which they derive in great part from their Indian descent, softened and improved by the admixture of the European element. It is, however, much to be regretted that from the singular necessities of their position, many of them are fast subsiding into the primitive Indian state; naturally improvident, and perhaps indolent, they prefer the wild life of the prairies to the tamer duties of a settled home; this is the character of the majority, and belongs more to those of French descent than of Scotch or English origin.

The Summer Hunt of the Buffalo.

288. About the 15th of June they start for their summer hunt of the buffalo. There are now two distinct bands of buffalo hunters, one being those of Red River, the other of the White Horse Plain, on the Assiniboine. Formerly these bands were united, but, owing to a difference which sprung up between

them, they now maintain a separate organization, and proceed to different hunting grounds. The Red River hunters go to the Yellow Stone and Coteau de Missouri; the White Horse Plain settlers generally hunt between the branches of the Saskatchewan, but also over the same grounds as their Red River brethren.

Improvidence of the Half-breeds.

289. The improvidence of many of the French Half-breeds is remarkable. During the winter before the last, those of the White Horse Plain camped out on the distant prairies, and killed thousands upon thousands of buffalo, in wanton revelry, taking only their skins and tongues, little caring that the reckless destruction of these animals must probably exercise a very important change for the worse in their own condition. As the buffalo diminish and go farther away towards the Rocky Mountains, the half-breeds are compelled to travel much greater distances in search of them, and consume more time in the hunt; it necessarily follows that they have less time to devote to farming, and many of them can be regarded in no other light than men slowly subjecting themselves to a process of degradation by which they approach nearer and nearer to Indian habits and character, relinquishing the civilized but to them unrequited pursuit of agriculture, for the wild excitement and precarious independence of a hunter's life. The fascination of a camp in the high prairies, compared with the hitherto almost hopeless monotony of the farms of Red River, can easily be understood by those who have tasted the careless freedom of prairie life. I was often told that the half-breeds are always sighing for the hunting season when in the settlements, and form but a feeble attachment to a settled home, which to the great majority can never offer, it is said, under present circumstances, a comfortable living, and much less a reasonable maintenance, or the consciousness of possessing a free and manly spirit, with rational aspirations and hopes.

Politeness of the French Half-breeds.

290. The politeness of the French half-breeds is quite delightful in these distant regions. On meeting, they shake

hands and immediately raise the cap. Mr. Pierre Gladieux, before referred to (page), is an excellent example of the better class of French half-breeds in Red River. A brief description of the manner in which I was treated by this gentleman may serve to show the genuine character of the hospitality and politeness with which strangers are received by the half-breeds of French extraction. I arrived at his house with Mr. Fleming, a guide, and two men, from an exploration of the Roseau River, some hours after sunset, on the evening of September the 29th. We were provided with an excellent supper, and our horses, seven in number, well supplied with hay in the yard. Before starting next morning an almost sumptuous breakfast was given to us, and while the horses were being saddled, I begged permission to see the farm-yard, &c. Under a small shed there was a neat, light, four-wheeled buggy, which as we passed Mr. Gladieux very politely and kindly placed at my disposal during the remaining period of my stay at Red River. He remarked that on the morrow he was going to the plains to hunt buffalo, and should not require the buggy for several weeks after my proposed departure. I requested the guide to ask what I had to pay for the entertainment of the party. The polite answer returned was as follows: "Nothing; it is not the custom of the people of this country to charge strangers who may honor them with a visit.

Kind of aid required to ameliorate the condition of the Half-breed Hunters.—Savings' Bank.

291. But few simple aids are required at Red River to ameliorate and vastly improve the condition of the more improvident and careless half-breeds. They frequently bring in a large quantity of buffalo meat or robes to the trading posts, and receive a large sum of money in exchange, or if they insist upon it, a certain quantity of rum. The money is spent at once in simple necessaries, dress and ornaments. The establishment of a Savings' Bank would have an excellent effect, and doubtless become the source of much permanent good, with other objects in view than those incident to the exclusive prosecution of the fur trade.

THE BUFFALO HUNTERS IN THE FIELD.

The Rev. Mr. Belcourt's description of the condition of some of the Half-breed Hunters.

292. I introduce the following description of the organization of the buffalo hunters when in the field, with a brief extract from a communication to Mr. Schoolcroft, by the Rev. Mr. Belcourt, a Roman Catholic clergyman, then resident at Red River, but now I believe living at the new settlement of St. Joseph's, about 100 miles south-west of Fort Garry. This extract contains a simple statement, from which a fair knowledge of the present condition of some half-breeds, and probable future condition of many, may be easily gleaned. "I should first remark that the autumnal hunt engages the attention of comparatively few men, for the following reasons: a portion of the half-breeds, who have not the means of passing the winter in the settlement, spread over that part of the country where they can subsist themselves and families, during the cold weather, by the chase of the elk, the moose, and the bear. Others, hoping to reap more profit by trapping the fur-bearing animals, seek the haunts of the marten, the fisher, the otter, the beaver, in the wooded regions and along the water-courses and lakes, so that ordinarily not more than one-third assemble for the fall hunt of the buffalo."

The Buffalo hunters.—Their organization.—Laws and regulations.

293. The following information was given me by Mr. Flett, who resides on the Assiniboine River, and at whose house I was very hospitably entertained. The start is made from the settlement about the 15th of June for the summer hunt, and the hunters remain in the prairie till the 20th August or 1st of September. One division (the White Horse Plain) goes by the Assiniboine River to the rapids, crossing, and then proceed in a south-westerly direction. The other, or Red River division, pass on to Pembina, and then also proceed in a southerly direction. The two divisions sometimes meet, but not intentionally. In Mr. Flett's division in 1849 there were, according to

a census taken near the Chiefs' Mountain, not far from the Strayenne River, Dacotah Territory, six hundred and three carts, seven hundred half-breeds, two hundred Indians, six hundred horses, two hundred oxen, four hundred dogs, and one cat. After the start from the settlement had been well made, and all stragglers or tardy hunters were thought to have arrived, a great council was held, and a president elected. A number of captains were nominated by the president and people jointly. The captains then proceeded to appoint their own policemen, the number assigned to each not exceeding ten. Their duty is to see that the laws of the hunt are strictly carried out. In 1849, if a man ran a buffalo without permission before the general hunt began, his saddle and bridle were cut to pieces, for the first offence; for the second offence of the same description his clothes were cut off his back. At the present day these punishments are changed to a fine of 20s. for the first offence. No gun is permitted to be fired when in the buffalo country before the "race" begins. A priest sometimes goes with the hunt, and mass is then celebrated in the open prairies. At night the carts are placed in the form of a circle with the horses and cattle inside the ring, and it is the duty of the captains and their policemen to see that this is rightly done. All laws are proclaimed in camp, and relate to the hunt alone. All camping orders are given by signal, a flag being carried by the guides, who are appointed by election. Each guide has his turn of one day, and no man can pass a guide on duty without subjecting himself to a fine of 5s. No hunter can leave the camp to return home without permission, and no one is permitted to stir until any animal or property of value supposed to be lost is recovered. The policemen at the order of the captains can seize any cart at night-fall and place it where they choose for the public safety, but on the following morning they are compelled to bring it back from the spot from which they moved it the evening previous. This power is very necessary in order that the horses may not be stampeded by night attacks of the Sioux or other Indian tribes at war with the half-breeds. A heavy fine is imposed in case of neglect in extinguishing fires when the camp is broken up in the morning. In sight of buffalo all the hunters are drawn up in line, the president, captains and police being a few yards in advance, restraining the impatient hunters. Not yet, not yet, is the cry of the president; the approach to the herd is cautiously made. Now! and as the word leaves the lips of the president the charge is made, and in a few minutes the excited half-breeds are among the bewildered buffalo.

Power of the Half-breed hunters.—Their independence.

294. The half-breed hunters, with their splendid organization when on the prairies, their matchless power of providing themselves with all necessary wants for many months together, and now since a trade with the Americans has sprung up, if they should choose, for years; their perfect knowledge of the country, and their full appreciation and enjoyment of a home in the prairie wilds. Winter or summer would render them a very formidable enemy in case of disturbance or open rebellion against constituted authorities. The half-breed hunters of Red River could pass into the open prairies at a day's notice and find themselves perfectly at home and secure, where white men not accustomed to such a life would soon become powerless against them, and exposed to continued peril.

What is the cause of the decline of the Half-breeds.

295. The causes which have led to the present condition and prospects of this people are truly a painful subject. It is one which cannot escape the attention and care of philanthropists. Men will enquire how it is, that a race giving evidence of admirable discipline, self-government, and courage when in the open prairies, should subside into indifferent and indolent husbandmen when in the settlements. Considered as the native population of Red River, how is it, will be asked, that so few among the many have succeeded in the course of years in acquiring comfortable homesteads, and well stocked granaries, and farm yards? and why has the European and Canadian element disappeared? The chances of nearly all have

been equal, land of admirable fertility every-where surrounds them, with unsurpassed advantages for rearing horses, cattle, and sheep, yet little or no progress has been made; and in respect of sheep, which might soon in a measure supply the place of the buffalo, a serious diminution in numbers has taken place. It is true that within the last few years many hundred head of cattle have been driven across the prairies of Minnesota to St. Paul's and sold well there. But this new export trade should have given encouragement to raising stock, yet stock with unlimited pasture is diminishing. The distant hunt consumes the time which might be given to far more profitable home industry, and those who really enjoy a settled life, and know the advantages which industry confers, from experience gained in Canada or Europe, leave the country and seek their fortunes elsewhere.

No signs of improvement visible.

296. Every stranger is struck with surprise that the houses of half-breed hunters show no signs of recent improvement, show no signs of care and attention devoted to gardens or the cultivation of fruit. Plums grow wild in the forest, but none are seen in the settlements. Apple trees are only now beginning to be tried at the Stone Fort. No effort of manufacturing industry is visible beyond the wind-mills for grinding wheat.

This decline observed by the half-breeds.

297. It must not be supposed that this stationary, or rather retrograde condition, is unnoticed by the mass of the people; they see the comfort by which the retired factors, the clergy, and the traders of the settlement are surrounded, and the comparative luxury which exists at the forts; but they do not rightly understand how their own condition might be remedied, for the majority cannot discover in what way the reward of industry may be won, or where a market for labor is to be found, except that kind of wild labor in the distant prairie, or in the woods, which they love instinctively, and which they have always been taught to consider most profitable, and alone

capable of securing their comfort and happiness. Under such circumstances it cannot cause surprise that discontent prevails in the settlements. Much disappointment and dissatisfaction is everywhere seen, and wrongs, real or imaginary, for which they have no redress, form the constant subject of complaint in daily conversation. In these repinings, all who are not in the service of the Honorable Hudson's Bay Company, or in some way connected with them, as far as my experience enabled me to judge, uniformly agreed.

Condition of the Half-breeds no criterion of the fitness of the country to support a prosperous people.

298. Let the condition of the half-breed hunters, generally, be contrasted with the present prosperity of Mr. Gowler, Mr. Gladieux, Mr. Flett, the McKays, and several others that might be named, who farm with industry and economy, and the capabilities of Red River and the Assiniboine will not be overlooked in surveying the paralyzed efforts of those who are taught to rely chiefly upon the hunter's precarious gains.

CHAPTER VI.

The Climate of the Valley of Red River.—Climate 'excessive;' spring and autumn frosts rare; the melon and Indian corn excellent recorders, 299 — Summer at Red River nearly 4° warmer than at Toronto, 300 — Explanation of the richness of the prairies, 300 — Mean of spring and summer months nearly one degree higher at Red River than at Toronto, 301 — Table of comparison of the meteorology of Red River with Toronto for corresponding months, 302 — Natural division of the seasons at Red River, 303 — Comparison between the annual mean at Red River and places in Europe, Quebec and Red River, 304 — Summer temperatures, 305 — Summer climate at Red River admirably fitted for agricultural purposes, 306 — Winter climate, cold intense, and of long duration, 307 — Salubrity of the climate, 308.

Meteorological Register.—Daily register, monthly means, annual mean, monthly fall of rain and snow.—Progress of the seasons.

THE CLIMATE OF THE VALLEY OF THE RED RIVER.

Climate "excessive."—Early spring and autumn frosts rare.—The Melon and Indian Corn excellent recorders.

299. The climate of the valley of Red River exhibits the extremes of many characteristics, which belong to the interior of continents in corresponding latitudes. High summer temperatures, with winter cold of extraordinary severity appear to prevail in Assiniboia, as in the interior of North Eastern Europe and Asia. It cannot fail to be noticed however, that the general absence of late spring and early autumn frosts, with an abundant fall of rain, during the agricultural months, are the distinguishing features of the climate of the valley of Red River. The melon growing in the open air, and arriving at perfect maturity in August and September, Indian corn succeeding invariably when due precautions are used to ensure ripening before the middle of September, are strong proofs of the almost uniform absence of summer frosts.

Summer at Red River nearly 4° warmer than at Toronto.—Explanation of the richness of the prairies.

300. A comparison with the climate of Toronto for corresponding months of the years 1855 and 1856, reveal some very curious and interesting facts, which may possess considerable importance. Limiting our attention at present to the summer months, we find from inspection of the following table of comparison, that the summer of Red River is nearly four degrees warmer than the summer at Toronto, and with this remarkable excess of temperature we find the unexpected difference of 21.74 inches of rain in favor of Red River. These meteorological facts explain the wonderful richness of the prairie vegetation, and the vast accumulation of vegetable matter which is now found there.

Mean of spring and summer months nearly 1° higher at Red River than at Toronto.

301. The small difference between the temperature of the spring at Toronto and Red River is another interesting fact. While the summer shows an excess of 3.78 the spring gives a deficiency of 2.83, so that the mean of the spring and summer months at Red River is nearly one degree higher than the corresponding months of Toronto. No feature in the meteorology of this distant region is likely to excite so much interest as the extraordinary fall of rain during the agricultural months. It is well known that the cause of the sterility of a vast region on the east of the Rocky Mountains, within the limits of the United States, is traced to extreme aridity. The great American desert which places so vast a barrier between the Mississippi valley and the west flank of the Rocky Mountains, derives its barrenness from the absence of rain, during the summer months. A fall of thirty inches in the valley of Red River during the summer of 1855, with a corresponding fall of 8.76 at Toronto, shows the remarkable difference in the humidity of the two places, and one which report states is generally maintained in other years.

Comparison of the Meteorology of Red River with Toronto for corresponding months.

302. Comparison of the meteorology of Red River Settlement with Toronto, Canada West, with reference to mean temperature, depth of rain and snow, from corresponding at both stations, from June, 1855, to May, 1856, inclusive.

Month.	Mean Temperature.		Rain in inches.		Snow in inches.		Temperature: Rain and Snow at Red River × or — of Toronto.
	Red R.	Toronto	Red R.	Toronto	Red R.	Toronto	
1855.	°	°	°	°	°	°	*Summer.*
June	69.10	59.93	6.0	4.07	0.0	0.0	Temperature × 3.78.
July	71.16	67.95	12.0	3.24	0.0	0.0	Rain × 21.74 inches.
August	63.03	64.06	12.5	1.45	0.0	0.0	Snow 0.0.
Summer	67 76	63 98	30.5	8.76	0.0	0.0	
							Autumn.
September	59.26	59.49	5.0	5.59	0.0	0 0	Temperature — 6.94.
October	42.20	45.39	0.0	2.48	2.0	0.8	Rain — 5.16 inches.
November	21.19	38.58	2.5	4.59	7.0	3.0	Snow × 5.2 inches.
Autumn	40.88	47.82	7.5	12.66	9.0	3.8	
1856.							*Winter.*
December	8.31	26.99	0.0	1.85	8.0	29.5	Temperature — 26.12.
January	10.55	16.02	0.0	0.00	5.0	13.6	Rain — 1.85 inches.
February	1.71	15.69	0.0	0.00	6.0	9.7	Snow — 33.8 inches.
Winter	6.85	19.57	0 0	1.85	19.0	52.8	
							Spring.
March	9.00	2.306	0.0	0.00	6.5	16.2	Temperature — 2.83.
April	39.63	42.27	6.5	2.78	3.0	0.1	Rain × 3.14 inches.
May	58.46	50.52	4.0	4.58	2.0	Inap.	Snow — 4.8 inches.
Spring	35.79	38.62	10.5	7.36	11.5	16.3	
Annual	34.38	42.50	48.5	30.63	39.5	72.9	

Annual.

Colder mean temperature	8°12
More rain	17.85 inches
Less snow	33.4 "
More moisture and most probably less evaporation	14.53 "

Natural division of the Seasons at Red River.

303. In the foregoing table the seasons are composed of the months which long custom has assigned to these arbitrary divi-

sions of the year, but certainly the natural division of the seasons for the climate of the Red River would appear to be as follows:

Summer...... June, July, August.
Autumn...... September, October.
Winter....... November, December, January, February, and March.
Spring .... April and May.

Comparison between the annual mean at Red River and places in Europe.—Quebec and Red River.

304. Assuming that the annual mean of 34.38 deduced from the following tables is within one or two degrees of what would be the results of several years observation, we find upon inspection of Dove Tables that there is not one locality within the limits of the United States where so low an annual mean attains. At Kasaw (Russia) lat. 55°48, long. 47°7, the mean of ten years was 35°45, and the difference between the hottest and coldest months 61°33, while at Red River the difference was 82°15. The difference between summer and winter at Kasaw was 56°00; at Red River 74°61. At Ozenburg, lat. 50°46, or in nearly the same latitude as that part of Red River Settlement where these observations were made, and in lon. 55°6, the annual mean is 35°6; the difference between the hottest and coldest month 66°38, and the difference between winter and summer 59°66. The following table will exhibit this relation at a glance:—

	Latitude.	Longitude.	Annual Mean.	Difference between Hottest and Coldest months.	Difference between Summer and Winter.
Red River Settlement	50°15′	......	34.38	82.15	74 61
Kasaw	55.48	47°7 E.	35.45	61.33	56.00
Ozenburg	50.46	55.6 E.	35.06	66.38	59.66

At Quebec, the difference between the hottest and coldest month is 60°75; at Red River Settlement 82°15, or 21°40 in excess. At Fort Snelling the difference is 61°89, or about one degree more than Quebec.

At Quebec the difference between the mean temperature of summer and winter is 53°93; at Fort Snelling 56°81; and at Red River Settlement 74°61.

Summer Temperature at Red River.—Comparison between the Summer Temperature at Red River with Montreal, Quebec, and Toronto.

305. The summer temperature of Red River, and the absence of frosts during that season, determine its fitness for agricultural purposes. The following table exhibits a comparison between the summer temperature of the settlement and various other well known places in Canada:—

Summer temperature at Red River Settlement.	67.76
Montreal, Canada........................	66.62
Quebec	62.91
Toronto................................	63.98

Summer climate of Red River admirably fitted for agricultural purposes.

306. The adaptation of the climate of the valley of Red River to the ordinary purposes of husbandry, during the agricultural season, scarcely requires further notice. It is sufficient to state that the conditions of temperature and humidity appear to be as favorable as those enjoyed in many parts of Canada or the north-eastern States of the Union.

Winter climate—Cold intense and of long duration.

307. The prevailing characters of the winter months are long continued intense cold, with a clear dry atmosphere. Mercury often freezes, and remains congealed for many days together. In calm weather, exposure to such intense cold is not described as producing inconvenience or suffering, and when the wind is blowing, the cold is rarely so intense. The half-breeds, and of course the Indians, camp out in the open plain during the whole winter, and the only protection they enjoy consists of a buffalo skin tent, and an abundance of buffalo robes.

308. The salubrity of the climate of Red River is indicated by the extent of professional services in the settlements. One medical man, not overburthened with work, to a population nearly reaching 7,000, may be accepted as a fair standard by which to estimate their sanitary condition. It will be understood that the foregoing comparisons refer to corresponding months of the same years, and are of course liable to those annual fluctuations to which the climatic elements of all countries are subject. It is very probable that more extended observations will reduce the extremes.

METEOROLOGICAL REGISTER

FOR THE YEAR

BEGINNING ON 1ST JUNE, 1855, AND ENDING ON 31ST MAY, 1856,

BY

DONALD GUNN.

RED RIVER SETTLEMENT, RUPERT'S LAND.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, JUNE, 1855.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	58	64	72	64⅔	No clouds.
2	57	68	58	61	Wind light: a few scattered white clouds.
3	59	72	58	63	Clear and calm.
4	60	72	58	63⅓	Sky overcast: light variable wind.
5	58	63	56	59	Few drops of rain.
6	63	68	58	63	A fringe of clouds round horizon; clear towards zenith.
7	58	78	58	64⅔	Light wind, few clouds.
8	56	76	74	63⅔	Blew pretty strongly in the height of the day.
9	54	70	62	62	The wind rose about 10, A.M. and blew a stiff breeze: a few clouds in the height of the day.
10	66	76	48	63⅓	Blowing freshly from 8 A.M. to 7 P.M: very few clouds.
11	58	68	54	60	Light breeze.
12	68	82	76	75⅓	Clear and calm day.
13	76	82	76	78⅓	In the morning light clouds; in the afternoon overcast.
14	72	88	71	77	In the morning overcast. Evening clear.
15	66	92	71	76⅓	Calm and without clouds all day.
16	71	82	68	73⅔	Fire in the forests on east side of the lake; few clouds.
17	70	86	74	76⅔	Calm, thick clouds, near the horizon; one inch of rain fell to-day.
18	66	82	72	73⅓	Wind light and variable: the air very sultry; thunder; 1 inch of rain.
19	72	88	67	75⅔	Wind.
20	76	78	63	72⅓	Calm; few drops of rain.
21	66	76	72	71⅓	Wind light: few clouds.
22	67	78	67	70⅔	Calm and clear.
23	66	90	70	75⅓	Wind light.
24	68	75	69	70⅔	Thunder and a light shower.
25	69	74	70	71	Last night, heavy rain for a short time; 1 inch fell.
26	63	71	66	66⅔	South west wind blowing hard in the forenoon.
27	68	78	65	70⅓	Wind light.
28	66	76	69	70⅓	Thunderstorm; heavy rain, mingled with hail; three inches rain.
29	69	74	68	70⅓	Cloudy, light wind.
30	68	70	58	65⅓	Wind blew strongly from the north.
			Mean.	69·10	

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, JULY, 1855.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	68	81	73	74	
2	56	78	68	67⅓	Smart shower ¼ inch fell.
3	65	71	60	65⅓	Clear, light wind.
4	64	72	58	64⅔	Light breeze from the north. Very few clouds.
5	67	81	61	69⅔	" Very few clouds.
6	61	75	68	68	"
7	58	66	62	62	Fresh breeze, loud thunder. Rain 3¾ inches fell.
8	68	80	60	69⅓	Cloudy.
9	66	78	66	70	Light clouds. Strawberries plentiful.
10	70	70	67	69	Thunder storm, ¾ inch rain fell.
11	67	80	64	70⅓	Light breeze.
12	60	70	67	65⅔	" Clear, wheat out of the shot belly.
13	56	80	75	70⅓	Sky overcast.
14	66	86	68	73⅓	Light breeze. A few white clouds.
15	68	88	58	71⅓	Blowing hard. Thunder storm. A boy killed by lightning.
16	70	74	70	71⅓	Wind light. Some of the boats arrived from York.
17	70	78	66	71⅓	Thunder and lightning, raining all night, 3 inches fell.
18	66	76	70	70⅔	Rained all night, 2 inches fell.
19	68	78	64	70	Light shower during the night.
20	66	82	75	74⅓	Calm. Begun hay cutting.
21	66	70	68	68	Light white clouds.
22	67	78	64	69⅔	Fresh breeze.
23	64	72	67	67⅔	Cloudy.
24	67	92	82	80⅓	Wind south, blowing freshly.
25	87	92	82	90⅓	" "
26	72	78	78	76	Thunder and lightning, 1 inch of rain fell.
27	64	85	74	74⅓	Fresh breeze from the north.
28	64	76	62	67⅓	Light clouds,
29	72	82	68	74	Rain from 9 P. M. to 3 A. M. this morning, 3 inches fell.
30	74	80	78	77⅓	Raining during the night, 2 inches fell.
31	72	78	70	73⅓	Wind from the south and west.
			Mean.	71.16	N.B.—Above 12 inches of rain fell this month.

MEREOROLOGICAL REGISTER, RED RIVER SETTLEMENT,
AUGUST, 1855.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	70	78	64	70⅔	Light wind.
2	62	74	68	68	Loose white clouds. Wind very light.
3	66	71	70	69	Blowing lightly from the north.
4	60	68	75	67⅔	
5	67	72	76	71⅔	Clear sky. Light wind.
6	66	79	77	74	A fringe of light clouds, round the horizon.
7	64	72	64	66⅔	Heavy clouds, wind blowing freshly all day, with heavy rain.
8	58	64	65	62⅓	From 7 A. M. yesterday to 6 A. M. this day, 5 inches of rain fell. Barley harvest commenced.
9	64	68	66	66	Heavy clouds. Pools of water on the ground.
10	68	68	58	64⅔	Wind variable, heavy clouds.
11	58	65	58	60⅓	Rained from 11 P. M. to 8 A. M. this morning, 5¼ inches fell. Boats left for the bay.
12	52	68	55	58⅓	Heavy clouds, rain fell on each side but none here.
13	55	65	56	58⅔	Calm, few clouds.
14	58	65	55	59⅓	Raining from 4 A. M. to 7 P. M. 2 inches fell.
15	54	56	44	51⅓	Light showers. The Aur. Bor. very bright, from west to east, nearly zenith.
16	46	58	54	52⅔	The first dry day for some time. The wheat crops keeping green.
17	56	70	68	64⅔	Blowing very hard from the south. No clouds.
18	58	74	70	67⅓	Blowing freshly. A few clouds.
19	68	72	70	70	Sky nearly overcast.
20	66	70	64	66⅔	Thick bank of clouds rose at the south, part of which went the north by the east, and part by the west.
21	68	72	68	69⅓	
22	64	68	62	64⅔	Light showers.
23	54	68	54	58⅔	Clear and calm. Wheat harvest progressing well.
24	48	65	55	56	Slight rain.
25	50	61	56	55⅔	Cloudy.
26	50	70	66	62	A few clouds.
27	58	74	68	66⅔	Overcast.
28	66	70	44	60	Showers of rain from 10 A. M. to 3 P. M. ¼ inch fell. Wind north.
29	44	68	56	56	Clear and calm. Slight frost.
30	50	70	62	60⅔	
31	48	64	52	54⅔	The frost on the 29th apparently did not injure wheat.
			Mean.	63.03	N.B.—12½ inches of rain fell during this month.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, SEPTEMBER, 1855.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 A. M.	Average.	
1	52	70	62	61⅓	
2	56	70	60	62	
3	60	70	58	62⅔	
4	62	82	65	69⅔	
5	70	81	70	73⅔	Light winds, with a few drops of rain.
6	70	82	66	72⅔	
7	67	73	65	68⅓	Cloudy, few drops of rain in the morning.
8	56	76	64	65⅓	Thick fog in first part of day; cleared up about 9 o'clock.
9	58	80	66	68	Light southerly wind; clear.
10	54	66	52	57⅓	Few drops of rain in the evening.
11	54	67	44	55	Blowing freshly from the north; cloudy. Poplar leaves falling.
12	42	71	56	56⅓	Grey frost this morning. Finished cutting wheat.
13	56	74	54	61⅓	
14	52	65	56	57⅔	
15	48	58	54	53⅓	Some of the Portage LaLorlie arrived from York. No ship.
16	44	56	49	49⅔	
17	46	58	42	48⅔	The last brigade of the portage arrived; left York on the 29th. No ship.
18	49	64	44	52⅓	
19	62	70	53	61⅔	Raining during the night. People making hay.
20	46	64	55	54	
21	48	71	62	60⅓	
22	63	65	62	63⅓	Thick foggy weather, raining during the day; one inch fell.
23	61	68	60	63	Raining during the night; one inch fell.
24	56	67	60	61	Rain during the night; one inch fell.
25	91	70	40	53¼	Rain during the night.
26	40	61	55	52¼	Wind north-west. Geese flying to the south.
27	52	68	60	60	Blowing strongly from the south.
28	58	57	53	66	Cloudy; a few drops of rain.
29	40	58	52	60	Clear, fine weather.
30	40	61	43	48	
			Mean	59.26	N.B.—About 5 inches of rain fell during the month.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, OCTOBER, 1855.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	56	70	58	61⅓	
2	52	68	48	56	
3	42	58	40	46⅔	
4	30	40	33	34⅓	Snow fell last night. Ship packet arrived; the larger ship could not make the shore for ice. A fine outlet for Red River.
5	34	42	36	37⅓	Cloudy; some snow on the ground.
6	34	42	36	37⅓	Some of the fall boats arrived. The ship came to York on 1st September, the other on the 4th. The boats returned next thing to light.
7	35	48	44	42⅓	The wa-was, or Wild Geese, are flying to the south.
8	44	63	90	55⅔	White fish spawning in the river.
9	63	68	51	60⅔	Taking up potatoes. Wa-was flying to the south.
10	50	56	44	50	Cloudy. 12 or 13 boats went up to-day; blowing strongly.
11	33	54	43	43⅓	Hard frost this morning.
12	53	68	51	57⅓	Blowing hard from the south.
13	51	68	46	55	Sky covered with smoke.
14	40	60	41	47	Grey frost. White fish spawning in the lake.
15	36	56	43	45	Cloudy.
16	42	59	52	51	
17	46	55	59	53⅓	Fine weather.
18	...	...	...	...	
19	32	38	34	34⅔	Cloudy.
20	28	32	20	26⅔	Snowing during the day.
21	28	28	22	26	
22	26	28	26	26⅔	Wind east.
23	28	32	30	30	Ice along the river; mild in the evening.
24	19	34	30	27⅔	
25	29	40	29	32⅔	The ground frozen these few days back; cloudy.
26	35	50	32	39	
27	28	49	30	39	Cloudy.
28	34	52	30	28⅔	Cloudy.
29	32	46	30	36	Cloudy.
30	30	38	...	34	
31	...	...	...	...	
			Mean	42·20	

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, NOVEMBER, 1855.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	26	40	30	32	Southerly wind.
2	32	38	36	35⅓	
3	29	36	34	33	
4	...	...	...	...	
5	...	...	...	...	
6	...	...	...	...	
7	...	...	...	...	
8	28	40	30	32⅔	Some snow fell last night.
9	32	38	36	32	Cloudy, the snow which fell on the night of the 7th, went off to day.
10	32	34	30	32	Cloudy.
11	30	33	28	30⅓	About one inch of snow fell last night. Snowing during the day.
12	32	38	29	33	Cloudy; about five inches of snow fell these two days past.
13	18	22	16	18⅔	One half the river frozen up this morning; 2 o'clock, river frozen over.
14	4	17	11	10⅔	People crossing the river.
15	11	18	6	11⅔	Snowing all day. Clear.
16	8	16	18	14	Cloudy.
17	21	24	16	20⅓	Sleet and snow.
18	0	+11	— 4	+ 2⅓	Cloudy.
19	— 7	+10	+ 6	+ 3	Cloudy.
20	+ 6	+ 8	— 8	+ 2	Cloudy. 2 inches snow fell. Wind north.
21	—12	+ 8	+ 6	+ ⅔	
22	+12	+18	+ 6	+12	
23	— 3	+20	+12	+ 9⅔	
24	+11	+28	+24	+21	
25	+26	+29	+ 24	26⅓	
26	+21	+26	+29	25⅓	
27	+32	+39	+26	+32⅓	Snow melting.
28	+20	+31	+20	+23⅔	Fog similar to that which prevails in the swampy country.
29	+20	+26	+24	23⅓	
30	+30	+36	+36	34	Snow thawing.
			Mean.	+21.19	N.B.—2½ inches rain and 7 inches of snow fell.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, DECEMBER, 1855.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1					
2	+ 2	+20	+10	10⅔	Wind South.
3	+ 6	+22	+ 8	+12	"
4	+ 3	+ 4½	0	2	"
5	—	—	—	—	
6	+22	+26	+20	+22⅔	
7	+22	+20	+14	18⅔	
8	0	— 4	— 4	+ 2⅔	Snowing this morning, 1 inch.
9	+ 2	+ 1	— 4	— ⅓	
10	— 4	— 4½	— 8	— 5½	
11	— 2	— 0	— 2	— 1⅓	
12	— 3	0	— 3	— 2	
13	— 1	+ 6	+ 6	+ 3⅔	
14	+ 9	+12	+ 7	+ 9⅓	
15	+16	+27	+18	+20⅓	Wind north. Snowing and drifting all day.
16	+ 8	+12	+ 6	+ 8⅔	The Aurora very bright and low.
17	— 4	— 2	+22	+ 5⅓	Large ring round the moon. Snow fell.
18	—20	— 4	— 9	—11	
19	—22	—10	—10	—14	Blew hard at night. 2 inches of snow fell.
20	—10	— 8	—18	—12	
21	—24	—12	— 8	—14⅔	Snowing during the day.
22	—14	— 9	—28	—17	Two bright haloes in the evening Hazy sky 32° at 11.
23	—44	—30	—44	—39⅓	Hazy which continued during the day. Wind south scarcely perceptible. Others have marked the haze on the continuance of cold.
24	—48	—30	—40	—39⅓	Calm.
25	—44	—28	—36	—36	Thick haze. Wind scarcely perceptible.
26	—38	—25	—34	—32⅓	
27	—32	—25	—40	—32⅓	
28	—42	—25	—36	—34⅓	Wind blowing lightly from the south.
29	—25	— 9	— 2	—12	
30	—32	—15	—24	—23⅔	
31	—29	—16	—29	—24⅔	The coldest weather that has been these 35 years past.
			Mean.	—8.31	N.B.—8 inches of snow fell.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, JANUARY, 1856.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	—19	— 9	—22	16⅔	Wind south-west.
2	—29	—16	—36	27	Clear, wind N., bright Aurora from N. to N. E., cloudy.
3	—40	—24	—24	—27⅓	Clear, wind S., haze, the sun very bright, blue bank of haze at the horizon.
4	—20	— 9	—36	—29⅓	Wind S. W., clear.
5	—23	—11	— 2	—12	Cloudy, wind S., 3 inches snow fell, blowing hard.
6	—24	—18	—28	—23⅓	Clear, wind W.
7	—36	—28	—36	33⅓	" N. W.
8	—38	—25	—28	—30⅓	Calm, wind N. W., fine day.
9	— 2	—15	—24	13⅔	" W.
10	—28	— 9	— 9	—15⅓	Wind S. W.
11	— 4	+ 9	+ 9	+ 4⅔	" S.
12	+ 4	+ 9	+ 6	+ 6⅓	Cloudy, wind S.
13	+ 4	+ 6	— 8	— ⅔	Wind N.
14	—18	— 6	0	— 8	" S. W.
15	+ 6	+16	+10	+10⅔	Clear, wind S.
16	+10	—14	—10	— 8	"
17	+10	+22	+16	+16	Wind N.
18	+ 2	+16	+13	+10⅓	Clear, wind N.
19	+ 4	+ 2	+ 2	0	Cloudy, " N.
20	— 8	0	—10	— 6	" " N.
21	—18	— 2	—10	—10	Clear, " S. W.
22	+16	+ 1	+ 3	+ 6⅔	" " S. W.
23	— 8	— 3	— 6	— 5⅔	Partly cloudy, wind N. W.
24	—20	—12	—26	—16	Wind N.
25	—20	—10	—10	—13⅓	Clear, wind S.
26	—20	—10	—18	—16	" " S.
27	—20	—10	—18	—16	" " S.
28	+ 4	— 4		0	Cloudy, " N., blowing, drifting hard.
29	—20	— 4	+ 4	— 6⅔	Wind S. W.
30	—22	— 6	—15	—14⅓	" S. W.
31	0	+ 6	0	— 2	" N. W., snowing and drifting.
			Mean.	10.55	N.B.—5 inches of snow fell.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, FEBRUARY, 1856.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	—26	—15	—34	—25	Wind N. W.
2	—36	—20	—34	—30	" W.
3	—34	— 8	...	—14	" S. W. Cloudy. Some snow falling.
4	—10	0	— 8	— 6	" S. W.
5	—24	14	—20	—19⅓	" " Clear.
6	—20	— 5	—22	—15⅔	" N. W. Cloudy in part. Aurora very bright, extending from N.W. to E. within 20° or 25° to zenith.
7	—34	—16	—21	—23⅔	" S. Aurora bright and low down.
8	—14	— 4	—10	— 6⅓	" W. Cloudy.
9	— 8	+ 8	— 4	— 1⅓	Snowed from 8, A.M. to 4 P.M., say 1 inch.
10	+ 8	— 4	—10	— 2	
11	—23	—10	—26	—19⅔	Wind N. W. Some flakes of snow falling.
12	—14	— 2	—24	—13⅓	
13	—21	— 2	— 2	— 8⅓	
14	+ 6	+12	+14	+10⅔	" S. W. Cloudy.
15	+ 2	+ 4	+ 2	+ 2⅔	" N.
16	+ 6	+20	+ 2	+ 9⅓	" N. W. Cloudy.
17	+16	+20	+ 2	+12⅔	" " "
18	+ 8	+24	+26	+19⅓	" S. Cloudy. Blowing stiffly.
19	+24	+33	+24	+27	" W. Clear.
20	+26	+35	+24	+28⅓	" W.
21	...	...	...	...	" N. W.
22	— 4	+10	+ 4	+ 3⅓	" W.
23	— 2	+10	— 4	+ 1⅓	" S. W. Cloudy.
24	— 6	+20	+10	+ 8	" N. W. 3 inches of snow fell during the day.
25	— 6	+10	+ 2	+ 2	" S. W. Clear.
26	— 2	+16	+10	+ 8	
27	— 8	+ 8	— 3	— 1	
*28	— 4	+10	—12	— 2	" N.
29	— 5	+15	+10	+ 7⅓	
			Mean.	1.71	N.B.—About 6 inches of snow fell this month.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, MARCH, 1856.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 A. M.	Average.	
1	+10	+16	+10	+12	Snowing from 10, A. M. to 5 P. M. 2 inches fell.
2	— 2	+16	+ 8	+ 7⅓	
3	+14	+14	+10	+12⅔	Snowing from 6, P. M. to 4. A. M. 2½ inches fell.
4	— 4	+ 8	+ 8	+ 4	Wind West.
5	0	+10	—10	0	Clear, N. and W.
6	—10	+16	+ 6	+ 4	Aurora formed a triple arch of very beautiful appearance from N.W. to N.E.; height of segment ab't 15°
7	—12	—10	—24	—15	Aurora low and bright, single arch; N. W. wind.
8	—32	— 4	—26	—20⅔	Calm. Horses taken home that wintered out, fat, but their hoofs much worn.
9	—22	— 2	—20	—14⅔	
10	—24	— 4	— 4	—10⅔	Wind South. Clear.
11	0	—10	+ 4	+ 4⅔	" W.
12	— 4	+26	+ 6	+ 9⅓	" N. W.
13	+ 2	+18	+ 6	+ 8⅔	" N.
14	+ 8	+18	+ 6	+10⅔	" S. W.
15	— 4	+16	+ 8	+ 6⅔	" S.
16	— 4	+32	+10	+12⅔	" S. W.
17	+14	+28	+ 8	+16⅔	
18	+10	+29	+14	+17⅔	" S.
19	+14	+34	+12	+20	" S.
20	+16	+38	+14	+22⅔	" S.
21	+22	+44	+18	+28	" S.
22	+18	+38	+34	+30	" S. E. Snow very soft.
23	+30	+14	+ 8	+17⅓	" N. W.
24	— 1	+28	+10	+12⅓	Clear and calm.
25	+10	+30	+20	+20	Wind N. W.
26	+10	+20	+ 1	+10⅓	" N. W. to S.W.
27	—15	+16	+ 4	+ 1⅔	" N. W.
28	— 1	+18	+ 4	+ 7	
29	— 2	+16	+ 4	+ 6	
30	— 6	+28	+10	+ 10⅔	
31	+20	+24	+38	+30⅔	
			Mean.	+ 9.09	N.B.—6½ inches of snow fell.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMENT, APRIL, 1856.

Day of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	+38	+46	+33	39	Thawing.
2	43	30	20	31	2 geese seen to day, snow very soft, wind north.
3	26	44	34	34⅔	
4	24	48	25	32⅓	
5	23	51	38	37⅓	
6	38	54	44	45⅓	
7	40	54	44	46	
8	44	36	26	35⅓	Wind south these six days, heavy rain, 2 inches fell.
9	12	30	24	22	
10	30	50	14	31⅓	
11	24	20	18	20⅔	
12	16	30	24	23⅓	
13	24	54	38	38⅔	
14	44	62	46	50⅔	Cloudy, sent our horses to the plains.
15	44	52	44	46⅔	" Raining all night, 4 inches fell, snow in the evening, 3 inches fell.
16	38	34	32	34⅔	
17	33	34	30	32⅓	Wind N. W., the ice began to break up on the river.
18	29	34	30	31	" S., clear.
19	36	44	38	39⅓	" "
20	56	66	44	55⅓	" "
21	38	58	42	46	Ice driving, frogs were heard to day for the first time.
22	46	60	40	48⅔	Sturgeon taken in nets in the river.
23	40	60	44	50	Wind S. E.
24	52	54	50	55⅓	" S., some rain.
25	32	38	33	34⅓	" N. "
26	36	58	48	47⅓	
27	58	50		54	" N.
28	36	58	44	46	" N. Sowing wheat, frost last night.
29	36	38	44	39⅓	" S. E. Cloudy, frost last night.
30	37	57		47	
			Mean.	+39.83	

METEOROLOGICAL REGISTER, RED RIVER SETTLEMFNT,
MAY, 1856.

Days of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	44	64	54	54	Busily occupied in sowing wheat.
2	...	...	...	...	
3	...	...	...	...	Whip-poor-will chirping.
4	...	...	...	...	
5	...	...	...	...	
6	...	...	...	...	
7	...	...	...	...	Wheat sowing going on.
8	...	...	...	...	
9	65	84	64	71	Abundance of flowers in the plain.
10	67	74	32	56	½ inch of snow fell.
11	34	43	39	38⅔	Wind north.
12	40	65	54	54⅓	
13	60	70	64	64⅔	
14	59	60	34	47⅓	Wind changed to N. about 12 o'clock, and became cold.
15	31	56	46	44⅓	
16	36	64	49	49⅔	
17	46	75	66	62⅓	
18	75	84	56	71⅔	
19	56	75	54	61⅔	Few drops of rain.
20	56	74	68	66	
21	58	66	58	60⅔	Heavy thunder. Thick clouds. Little rain.
22	62	76	62	66⅔	
23	64	62	56	60⅔	
24	52	58	58	56	
25	55	65	62	60⅔	
26	62	55	52	56⅓	4 inches of rain fell.
27	52	74	54	60	
28	54	56	52	54	
29	51	61	54	55⅓	
30	58	74	62	64⅔	
31	62	73	63	66	
			Mean.	58.46	N. B.—About 6 inches of snow and rain.

COURSE.	June.	July.	August.	Sept.	Octob.	Novem.	Decem.	Jan'y.	Feb'y.	March.	April.	May.	Total.
North	7	6	8	5	6	3	8	9	2	5	8	3	70
North East	5	......	1	......	......	2	1	......	......	......	2	2	13
East..............................	......	......	1	3	1	......	2	......	......	......	1	......	8
South East	......	1	5	3	3	1	......	......	......	3	4	1	21
South	5	14	5	11	10	11	10	10	6	10	10	5	107
South West	3	3	7	2	2	4	2	7	3	2	3	4	42
West	6	5	4	6	2	3	3	3	6	3	......	2	43
North West	2	2	1	......	3	1	......	2	9	7	2	1	30

N. B.—June 1 calm and 1 day variable wind, so light as to be scarcely perceptible.
October 4 days variable wind,
December 1 calm day, 4 variable.
February 3 variable.
March 1 calm day.
10 days of May enregistered.

(Signed,) D. GUNN.

MONTHLY MEANS.

June.	July.	Aug.	Sept.	Octob.	Nov.	Dec.	Jan'y.	Feb'y.	March.	April.	May.
+69 10	+71.16	+63.03	+59.26	+42.20	+21.19	—8.31	—10.55	—1.71	+9.09	+39.83	+58.46

ANNUAL MEAN.

34.38.

Summer, 67.76 : *Autumn*, 40.88 : *Winter*, 6.85 : *Spring*, 35.79.

MONTHLY FALL OF *RAIN* AND *SNOW*, (1855–56.)

RAIN.

Jan'y.	Feb'y.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0.0	0.0	0.0	6.5	4.0	6.0	12.0	12.5	5.0	0.0	2.5	0.0

Total amount of fall, 48.5 inches.

SNOW.

Jan'y.	Feb'y.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
5.0	6.0	6.5	3.0	2.0	0.0	0.0	0.0	0.0	2.0	7.0	8.0

Total amount of fall, 39.5 inches.

ON THE PROGRESS OF THE SEASONS AND STATE OF THE WEATHER AT RED RIVER COLONY, FROM 1ST JUNE, 1855, TO 31ST MAY, 1856.

1855. June 5th, was the coldest day in the month. Thermometer, 7 a.m., 58; 2 p.m., 63; 9 p.m., 56. The 14th was the hottest day. Thermometer, 7 a.m., 72; 2 p.m., 88; 9 p.m., 71. Three inches of rain fell on the 17th, one on the 19th, and six on the 25th.

July 2nd was the coldest. Thermometer, 7 a.m., 56; 2 p.m., 78; 9 p.m., 68: light rain. The 25th was the hottest day. 7 a.m., 87; 2 p.m., 92; 9 p.m, 82. 7th, rain 3⅜ inches. 10th, rain ¾ inches. Thunderstorm on the 17th, rain 3 inches. 26th, 1 inch rain; 29th, 3 inches rain; 30th, 2 inches: total, 14⅝ inches. Wheat out of the ear. On the 12th hay-cutting commenced. Tabanü and mosquitoes very numerous and troublesome.

August:—Coldest day, 29th. Thermometer, 7 a.m., 44; 2 p.m., 68; 9 p.m., 56. The hottest day was the 5th. 7 a.m., 67; 2 p.m., 86; 9 p.m., 76. On the 8th, 5 inches of rain fell; 11th, 5¼ inches fell; 14th, 2 inches; 27th, ¼ inch: total, 12½ inches. Barley harvest commenced about the 1st; wheat harvest on the 15th. Slight frost on the 30th.

September:—The coldest day was the 30th. Thermometer average + 48. The hottest day was the 5th; thermometer, 7 a.m., 70; 2 p.m., 80; 9 p.m., 70. Total of rain during the month, 6½ inches. Finished shearing wheat on the 8th. A few leaves falling. 26th, grey geese flying to the south.

October:—The warmest day was the first. Thermometer, 7 a.m., 56; 2 p.m., 70; 9 p.m., 58. Some snow fell on the 4th. Taking up potatoes on the 8th. White geese flying to the south, and continued to do so up to the 20th, and a few flocks later than that; all the larger kind of ducks leave about the same time. The decidurus trees are bare of leaves, except the oak, and some of the hardier kinds.

November:—The 2nd was the warmest day. Thermometer, 7 a.m., 32; 2 p.m., 38; 9 p.m., 36. 2½ inches rain fell on the 3rd; 5 inches of snow fell on the 11th; 12th, river covered over with ice. The coldest day of the month was the 21st, thermometer, 7 a.m., — 12; 2 p.m., + 8; 9 p.m., + 6. Warm weather from the 21st to the end of the month. 7 inches of snow fell during the month. Flocks of snow birds have made their appearance from the north, and all the summer birds are gone.

December:—The warmest day was the 6th. Thermometer, 7 a.m., + 22; 2 p.m., + 26; 9 p.m., + 30. The coldest day was the 24th; thermometer, 7 a.m., — 48; 2 p.m., — 30; 9 p.m., — 40. We had six days of very cold weather, including the 23rd and 28th. The wind blew from the north during three days before the severe cold began; during its continuance there was very little wind, and for two of the coldest days it was at the south. 8 inches of snow fell.

1856, January:—The warmest day was the 17th. Thermometer, 7 a.m., + 10; 2 p.m., + 22; 9 p.m., + 16. The coldest was the 7th: thermometer, 7 a.m., — 36; 2 p.m., 28; 9 p.m., — 36. 5 inches of snow fell. The average cold for this month has not been great; very little wind.

February:—Coldest day the 2nd. Thermometer, 7 a.m.,—36; 2 p.m., — 20; 9 p.m., — 34. The warmest day was the 20th: thermometer, 7 a.m., + 26; 2 p.m., + 35; 9 p.m., + 24. 6 inches of snow fell. After the 12th, spirits of wine in the glass stood with few exceptions above zero, and the weather has been pleasant.

March:—The coldest day was the 8th; 7 a.m.,—32; 2 p.m. 24; 9 p.m., — 26. The warmest day was on the 22nd. Thermometer, 7 a.m., + 28; 2 p.m., + 38; 9 p.m., + 34. The thermometer fell during the night a few degrees below zero; but on the whole the weather was pleasant; 6½ inches of snow fell. Much of the snow melted during the month. Barking crows made their appearance about the 20th.

April:—Geese made their appearance on the 2nd, and the snow birds left us for the north. The 12th was the coldest day this month: thermometer, 7 a.m., + 16; 2 p.m., + 30; 9 p.m., + 24. Warmest day, 23rd: thermometer, 7 a.m., + 46; 2 p m., + 66; 9 p.m., + 44. About 6 inches of snow, and 5 of rain fell. On the 16th the rain began to throw off its winter coat; clear of ice on the 20th. Sturgeon taken in the river in great numbers: the snow all away. Wild fowl to be seen in every direction on the 29th, and sowing wheat commenced.

May:—The coldest day, 11th. Thermometer 7 a. m. + 34; 2 p. m. + 43; 9 p. m. + 39. The warmest day was the 18th, 7 a. m. + 75; 2 p. m. + 84; 9 p. m. + 56; four inches rain fell on the 26th. On the 4th whip-poor-will began his serenades. The wheat sown on the 29th has germinated, and given a green appearance to the field. On the 9th wild geese abundant in the plains; maple in leaf; gooseberry bushes the same; finished sowing wheat on the 10th.

1856. Wheat sown in the beginning of May, was in the ear on the 13th July, and ripe on the 20th August. The wheat sown on the 29th April was ripe on the 14th August. The hottest day this last summer was the 20th of July. Barley harvest commenced in July; finished cutting wheat on the 28th August; slight frost on the 30th of the same month; potatoes taken up first week of October.

6th September.—Flocks of grey geese flying to the south. Premus Americana ripe and very plentiful in the first part of this month, or rather before this month. Flocks of passenger pigeons are in from the north, and leave from the 20th to the last of the month. On the night of the 7th whip-poor-will gave us his parting song. Corugonus lucidus enter the river to spawn. The corugonus albus in lake Winipeg commence spawning about the 10th of October, and end about the 1st November.

CHAPTER VII.

THE APPROACHES TO THE VALLEY OF LAKE WINIPEG—THE ROUTE VIA ST. PAUL, CROW WING, AND PEMBINA.

Kind of attention the valley of Lake Winipeg will attract.

809. The valley of Lake Winipeg is separated from the valleys of Mississippi and St. Lawrence by extensive .barriers, which have hitherto been instrumental in preserving it from the approach and intrusion of civilized races. The time has now arrived when this secluded region is likely to attract a wide spread attention, and inquiry will naturally be turned not only to its own resources, but to its relations in point of geographical position; means of communication with the commercial world, and the opportunities it may supply for establishing a direct line of communication across the continent of America between the Pacific and Atlantic Oceans.

Dimensions of the Valley of the Saskatchewan.

810. The Saskatchewan and the Red Rivers of the North drain an area exceeding 400,000 square miles, and that part of it included within British Territory, lies between the 49th and 55th parallels of latitude, and the 93rd and the 115° of longitude west of Greenwich, a European area, similarly situated east of the 10th degree of longitude, would comprehend very nearly the whole of England and Ireland, part of the German Ocean, the English channel, the north eastern corner of France, the whole of Belgium and Holland, and the greater part of the valley of the Rhine, together with the Kingdom of Hanover.*

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* See a short paper on the "Great North West," by the author of this Report.

311. The routes by which access is obtained to this great valley lie in the courses of three different water sheds. First. The Hudson Bay routes from the Ocean, inaccessible on account of ice during nine, and sometimes ten months in the year. Second. The Lake Superior route, via Rainy Lake. Third. The Mississippi valley route, from St. Paul's to Red River. As it is not at all probable that the Hudson Bay routes will ever be selected as permanent means of communication between the great valley and Canada or the United States, further reference to them is unnecessary. The Lake Superior route is described in the foregoing report, and it now remains to glance at the communication with the United States via Crow Wing and St. Paul's. This will best be accomplished by a short descriptive narrative in the form of a daily journal of the journey from Fort Garry to Crow Wing.

Pembina—Village of St. Joseph.

312. On the 19th of October we camped at Pembina, near the mouth of the river of the same name. Whatever may have been the former condition of this village, it is now only a small and scattered collection of log houses situated on the right bank of Red River, in the new territory of Dacotah. The ruins of several good houses, formerly occupied by the Roman Catholic Mission, are still to be seen, but in all other respects the town or village and port of Pembina exist only on paper. The few log houses which have given a name and a certain reputation to this village, derived probably from its being a frontier post of far more pretensions than at the present time, still serve for an excuse to attract public attention to the fancied progress of the Americans on this part of the Red River valley. In the late returns for the election of officers in the new State of Minnesota (October, 1857,) the names of many resident voters are recorded, but it would be a matter of great difficulty to discover their abode now. Some United States dragoons, forming part of an exploring party camped near Pembina two years ago, gave rise to a report which has often appeared in print and on maps, that Pembina is a post garrisoned by United States troops

instead of being a small village containing about a dozen scattered log houses. About a day's journey west of Pembina, the village of St. Joseph is situated, in the territory of Dacotah, and close to the boundary line. It was founded by the Red River half-breeds, who, as I was informed, were induced to settle there, to escape the floods of Red River, from which they had suffered or anticipated severe losses. The village has already acquired considerable importance as a depôt for the articles of trade, which are brought by the citizens of the United States from St. Paul's.

Country about Pembina.—Character of the Prairies.—Fires in the West.

313. The country about Pembina is very fertile and beautiful. On the west the flanks of the Coteau de Missouri, before noticed, are seen about 30 miles distant, and limit the valley of the river in that direction. On the east side of the river our course lay through a beautiful level prairie dotted with willow bushes for about 19 miles in a south-east direction, when we struck the first of the "Deux Rivières;" at sunset crossed the river and camped, having travelled 22 miles. A very perceptible change in the character of the prairie was observed the next day, on approaching Pine River; the soil consisted of a light vegetable mould; and wherever rain had fallen and collected in little hollows, sand showed itself. Hummocks of aspen and willow relieved the sameness of the scenery; and a distinct rise by ridges, at the base of which the river flowed, was easily recognised. Pine River at the crossing place is about 25 broad; the current rapid. Between Pine River and Rock River the soil preserves its light character, the trail runs for many miles on ancient lake ridges or beaches which are similar in every respect to those observed between the Roseau and Fort Garry. Last night, 13th October, was cold and fine; a few grasshoppers still lingered on the prairies, and their eggs in many places lay in vast numbers on the surface of the ground. The day was beautiful and warm, and, as night approached, the sky in the north-west began to assume a ruddy tinge, and finally a lurid red, produced by the fires in the rich

prairies beyond Stony Mountains, at least 90 miles in an air line from Pine River, where we camped.

314. Wednesday, 14th. During the morning we travelled along an ancient lake ridge, doubtless a continuation of one of those which appear some miles east of the settlements on Red River. The ridge is cut by Rock and Serpent Rivers. Prairie hens were seen in great abundance, and numerous flocks of wild geese passed over head. Near Pine River we met the mail borne on the back of a half-breed, who was accompanied by a boy 15 or 16 years old carrying the blankets and cooking utensils. The mail bearer was ill, and had had no food for two days, having been longer on his journey than he expected, and without a gun to kill the prairie hens which were so abundant on the trail. He carried the mail in a large leather bag by means of a strap passing round his head. He was poorly clothed, wet, and miserable; he had been 15 days coming from Crow Wing. We gave him some buffalo meat and pemican, on the strength of which he hoped to reach Pembina in two days. Serpent River flows between steep sand banks and hills. The soil continues light, and often passing Serpent River is scarcely fitted for arable farms, but might furnish very extensive and excellent sheep pasturage. The prairies here are altogether destitute of timber, so that this day we were compelled to carry our fuel for cooking purposes from Serpent River to the middle of the plain where we camped for the night.

Red Lake River.—Mode of crossing.

315. Thursday, 15th. In the morning ice was found in the kettles, but the coolness of the night was not unpleasant. The trail ran for many miles on a perfect level and rounded Lake Ridge, and then descended into a low, rich, wet prairie, towards Red Lake River, 186 miles from Fort Garry by our estimate. Across this fine stream the baggage was passed in two small canoes, the horses swam across, and the carts were hauled with ropes. The valley of Red Lake River is heavily timbered, and will probably become an important stream as the settlement

begins to descend Red River north of Graham's Point. The valley of Red Lake River is the war path of the Sioux and Ojibways, and our half-breeds asked us not unnecessarily to fire off any guns or pistols as long as we were within ten or twelve miles of Red Lake River, that we might not attract the attention of any stray parties of Sioux who might possibly be within hearing.

Absence of Wood.—Smoke of distant Fires.

316. Friday, 16th. Passed over a high prairie, rising at long intervals in steps, and its summit marshy. The breadth of this prairie is about 23 miles, and it is terminated by Turtle Creek. No trees are visible; the soil is generally light, and the higher portions gravelly, but in the depression the soil is of the first quality. Boulders of the primary unfossiliferous rocks were observed in great numbers on the north flanks of the ancient lake ridges; met here a caravan of 9 carts containing merchandize which the owners had purchased at St. Paul; they had been 21 days coming a distance of 320 miles; their goods are enumerated elsewhere. In the afternoon we arrived at a part of the prairie, where the fire had been; as far as the eye could see, westward, the country looked brown, black, and desolate. The strong north-westerly wind, which had been blowing during the day, drove the smoke from the burning prairies beyond Red River, in the form of a massive wall towards us—a sight more marvellously grand, and at the same time desolate, could scarcely be conceived than that approaching wall of smoke over the burnt expanse of prairie stretching far away to the west. The upper edge was fringed with rose color by the rays of the sun it had just obscured; and, as it swept slowly on, the rich rose tints faded with a burnt sienna hue which gradually died away as the obscuration became more complete, until, though early in the afternoon, and with a cloudless sky towards the east, a twilight gloom began to settle around us, and the rolling folds of smoke swept over the prairie, rapidly enveloping all things in a thin but impenetrable haze; although the sun was still some degrees above the horizon, the light was that of a dim twilight.

METEOROLOGICAL REGISTER, RED RIVER SETTLEMFNT, MAY, 1856.

Days of the month.	THERMOMETER.				REMARKS.
	7 A. M.	2 P. M.	9 P. M.	Average.	
1	44	64	54	54	Busily occupied in sowing wheat.
2	...	...	...	...	
3	...	...	...	...	Whip-poor-will chirping.
4	...	...	...	...	
5	...	...	...	...	
6	...	...	...	...	
7	...	...	...	...	Wheat sowing going on.
8	...	...	...	...	
9	65	84	64	71	Abundance of flowers in the plain.
10	67	74	32	56	½ inch of snow fell.
11	34	43	39	38⅔	Wind north.
12	40	65	54	54⅓	
13	60	70	64	64⅔	
14	59	60	34	47⅔	Wind changed to N. about 12 o'clock, and became cold.
15	31	56	46	44⅓	
16	36	64	49	49⅔	
17	46	75	66	62⅓	
18	75	84	56	71⅔	
19	56	75	54	61⅔	Few drops of rain.
20	56	74	68	66	
21	58	66	58	60⅔	Heavy thunder. Thick clouds. Little rain.
22	62	76	62	66⅔	
23	64	62	56	60⅔	
24	52	58	58	56	
25	55	65	62	60⅔	
26	62	55	52	56⅓	4 inches of rain fell.
27	52	74	54	60	
28	54	56	52	54	
29	51	61	54	55⅓	
30	58	74	62	64⅔	
31	62	73	63	66	
			Mean.	58·46	N. B.—About 6 inches of snow and rain.

COURSE.	June.	July.	August.	Sept.	Octob.	Novem.	Decem.	Jan'y.	Feb'y.	March.	April.	May.	Total.
North	7	6	8	5	6	3	8	9	2	5	8	3	70
North East	5	......	1	......	......	2	1	......	......	......	2	2	13
East...........................	......	......	1	3	1	......	2	......	......	......	1	......	8
South East	......	1	5	3	3	1	......	......	......	3	4	1	21
South	5	14	5	11	10	11	10	10	6	10	10	5	107
South West	3	3	7	2	2	4	2	7	3	2	3	4	42
West	6	5	4	6	2	3	3	3	6	3	......	2	43
North West	2	2	1	......	3	1	......	2	9	7	2	1	30

N. B.—June 1 calm and 1 day variable wind, so light as to be scarcely perceptible.
October 4 days variable wind.
December 1 calm day, 4 variable.
February 3 variable.
March 1 calm day.
10 days of May unregistered.

(Signed,) D. GUNN.

MONTHLY MEANS.

June.	July.	Aug.	Sept.	Octob.	Nov.	Dec.	Jan'y.	Feb'y.	March.	April.	May.
+69 10	+71.16	+63.03	+59.26	+42.20	+21.19	—8.31	—10.55	—1.71	+9.09	+39.83	+58.46

ANNUAL MEAN.

34.38.

Summer, 67.76 : *Autumn*, 40.88 : *Winter*, 6.85 : *Spring*, 35.79.

MONTHLY FALL OF *RAIN* AND *SNOW*, (1855–56.)

RAIN.

Jan'y.	Feb'y.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0.0	0.0	0.0	6.5	4.0	6.0	12.0	12.5	5.0	0.0	2.5	0.0

Total amount of fall, 48.5 inches.

SNOW.

Jan'y.	Feb'y.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
5.0	6.0	6.5	3.0	2.0	0.0	0.0	0.0	0.0	2.0	7.0	8.0

Total amount of fall, 39.5 inches.

ON THE PROGRESS OF THE SEASONS AND STATE OF THE WEATHER AT RED RIVER COLONY, FROM 1st JUNE, 1855, TO 31st MAY, 1856.

1855. June 5th, was the coldest day in the month. Thermometer, 7 a. m., 58; 2 p.m., 63; 9 p.m., 56. The 14th was the hottest day. Thermometer, 7 a. m., 72; 2 p. m., 88; 9 p. m., 71. Three inches of rain fell on the 17th, one on the 19th, and six on the 25th.

July 2nd was the coldest. Thermometer, 7 a.m., 56; 2 p.m., 78; 9 p.m., 68: light rain. The 25th was the hottest day. 7 a.m., 87; 2 p.m., 92; 9 p.m, 82. 7th, rain 3⅜ inches. 10th, rain ¾ inches. Thunderstorm on the 17th, rain 3 inches. 26th, 1 inch rain; 29th, 3 inches rain; 30th, 2 inches: total, 14⅝ inches. Wheat out of the ear. On the 12th hay-cutting commenced. Tabanü and mosquitoes very numerous and troublesome.

August:—Coldest day, 29th. Thermometer, 7 a.m., 44; 2 p.m., 68; 9 p. m., 56. The hottest day was the 5th. 7 a. m., 67; 2 p.m., 86; 9 p.m., 76. On the 8th, 5 inches of rain fell; 11th, 5¼ inches fell; 14th, 2 inches; 27th, ¼ inch: total, 12½ inches. Barley harvest commenced about the 1st; wheat harvest on the 15th. Slight frost on the 30th.

September:—The coldest day was the 30th. Thermometer average + 48. The hottest day was the 5th; thermometer, 7 a.m., 70; 2 p.m., 80; 9 p.m., 70. Total of rain during the month, 6½ inches. Finished shearing wheat on the 8th. A few leaves falling. 26th, grey geese flying to the south.

October:—The warmest day was the first. Thermometer, 7 a.m., 56; 2 p.m., 70; 9 p.m., 58. Some snow fell on the 4th. Taking up potatoes on the 8th. White geese flying to the south, and continued to do so up to the 20th, and a few flocks later than that; all the larger kind of ducks leave about the same time. The decidurus trees are bare of leaves, except the oak, and some of the hardier kinds.

November :—The 2nd was the warmest day. Thermometer, 7 a.m., 32 ; 2 p.m., 38 ; 9 p.m., 36. 2½ inches rain fell on the 3rd ; 5 inches of snow fell on the 11th ; 12th, river covered over with ice. The coldest day of the month was the 21st, thermometer, 7 a.m., — 12 ; 2 p.m., + 8 ; 9 p.m., + 6. Warm weather from the 21st to the end of the month. 7 inches of snow fell during the month. Flocks of snow birds have made their appearance from the north, and all the summer birds are gone.

December :—The warmest day was the 6th. Thermometer, 7 a.m., + 22 ; 2 p.m., + 26 ; 9 p.m., + 30. The coldest day was the 24th ; thermometer, 7 a.m., — 48 ; 2 p.m., — 30 ; 9 p.m., — 40. We had six days of very cold weather, including the 23rd and 28th. The wind blew from the north during three days before the severe cold began ; during its continuance there was very little wind, and for two of the coldest days it was at the south. 8 inches of snow fell.

1856, January :—The warmest day was the 17th. Thermometer, 7 a.m., + 10 ; 2 p.m., + 22 ; 9 p.m., + 16. The coldest was the 7th : thermometer, 7 a.m., — 36 ; 2 p.m., 28 ; 9 p.m., — 36. 5 inches of snow fell. The average cold for this month has not been great ; very little wind.

February :—Coldest day the 2nd. Thermometer, 7 a.m.,—36 ; 2 p.m., — 20 ; 9 p.m., —34. The warmest day was the 20th : thermometer, 7 a.m., + 26 ; 2 p.m., + 35 ; 9 p.m., + 24. 6 inches of snow fell. After the 12th, spirits of wine in the glass stood with few exceptions above zero, and the weather has been pleasant.

March :—The coldest day was the 8th ; 7 a.m.,—32 ; 2 p.m. 24 ; 9 p.m., — 26. The warmest day was on the 22nd. Thermometer, 7 a.m., + 28 ; 2 p.m., + 38 ; 9 p.m., + 34. The thermometer fell during the night a few degrees below zero ; but on the whole the weather was pleasant ; 6½ inches of snow fell. Much of the snow melted during the month. Barking crows made their appearance about the 20th.

April:—Geese made their appearance on the 2nd, and the snow birds left us for the north. The 12th was the coldest day this month: thermometer, 7 a.m., + 16; 2 p.m., + 30; 9 p.m., + 24. Warmest day, 23rd: thermometer, 7 a.m., + 46; 2 p m., + 66; 9 p.m., + 44. About 6 inches of snow, and 5 of rain fell. On the 16th the rain began to throw off its winter coat; clear of ice on the 20th. Sturgeon taken in the river in great numbers: the snow all away. Wild fowl to be seen in every direction on the 29th, and sowing wheat commenced.

May:—The coldest day, 11th. Thermometer 7 a. m. + 34; 2 p. m. + 43; 9 p. m. + 39. The warmest day was the 18th, 7 a. m. + 75; 2 p. m. + 84; 9 p. m. + 56; four inches rain fell on the 26th. On the 4th whip-poor-will began his serenades. The wheat sown on the 29th has germinated, and given a green appearance to the field. On the 9th wild geese abundant in the plains; maple in leaf; gooseberry bushes the same; finished sowing wheat on the 10th.

1856. Wheat sown in the beginning of May, was in the ear on the 13th July, and ripe on the 20th August. The wheat sown on the 29th April was ripe on the 14th August. The hottest day this last summer was the 20th of July. Barley harvest commenced in July; finished cutting wheat on the 28th August; slight frost on the 30th of the same month; potatoes taken up first week of October.

6th September.—Flocks of grey geese flying to the south. Premus Americana ripe and very plentiful in the first part of this month, or rather before this month. Flocks of passenger pigeons are in from the north, and leave from the 20th to the last of the month. On the night of the 7th whip-poor-will gave us his parting song. Corugonus lucidus enter the river to spawn. The corugonus albus in lake Winipeg commence spawning about the 10th of October, and end about the 1st November.

CHAPTER VII.

THE APPROACHES TO THE VALLEY OF LAKE WINIPEG—THE ROUTE VIA ST. PAUL, CROW WING, AND PEMBINA.

Kind of attention the valley of Lake Winipeg will attract.

809. The valley of Lake Winipeg is separated from the valleys of Mississippi and St. Lawrence by extensive .barriers, which have hitherto been instrumental in preserving it from the approach and intrusion of civilized races. The time has now arrived when this secluded region is likely to attract a wide spread attention, and inquiry will naturally be turned not only to its own resources, but to its relations in point of geographical position; means of communication with the commercial world, and the opportunities it may supply for establishing a direct line of communication across the continent of America between the Pacific and Atlantic Oceans.

Dimensions of the Valley of the Saskatchewan.

810. The Saskatchewan and the Red Rivers of the North drain an area exceeding 400,000 square miles, and that part of it included within British Territory, lies between the 49th and 55th parallels of latitude, and the 93rd and the 115° of longitude west of Greenwich, a European area, similarly situated east of the 10th degree of longitude, would comprehend very nearly the whole of England and Ireland, part of the German Ocean, the English channel, the north eastern corner of France, the whole of Belgium and Holland, and the greater part of the valley of the Rhine, together with the Kingdom of Hanover.*

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* See a short paper on the "Great North West," by the author of this Report.

311. The routes by which access is obtained to this great valley lie in the courses of three different water sheds. First. The Hudson Bay routes from the Ocean, inaccessible on account of ice during nine, and sometimes ten months in the year. Second. The Lake Superior route, via Rainy Lake. Third. The Mississippi valley route, from St. Paul's to Red River. As it is not at all probable that the Hudson Bay routes will ever be selected as permanent means of communication between the great valley and Canada or the United States, further reference to them is unnecessary. The Lake Superior route is described in the foregoing report, and it now remains to glance at the communication with the United States via Crow Wing and St. Paul's. This will best be accomplished by a short descriptive narrative in the form of a daily journal of the journey from Fort Garry to Crow Wing.

Pembina—Village of St. Joseph.

312. On the 19th of October we camped at Pembina, near the mouth of the river of the same name. Whatever may have been the former condition of this village, it is now only a small and scattered collection of log houses situated on the right bank of Red River, in the new territory of Dacotah. The ruins of several good houses, formerly occupied by the Roman Catholic Mission, are still to be seen, but in all other respects the town or village and port of Pembina exist only on paper. The few log houses which have given a name and a certain reputation to this village, derived probably from its being a frontier post of far more pretensions than at the present time, still serve for an excuse to attract public attention to the fancied progress of the Americans on this part of the Red River valley. In the late returns for the election of officers in the new State of Minnesota (October, 1857,) the names of many resident voters are recorded, but it would be a matter of great difficulty to discover their abode now. Some United States dragoons, forming part of an exploring party camped near Pembina two years ago, gave rise to a report which has often appeared in print and on maps, that Pembina is a post garrisoned by United States troops

instead of being a small village containing about a dozen scattered log houses. About a day's journey west of Pembina, the village of St. Joseph is situated, in the territory of Dacotah, and close to the boundary line. It was founded by the Red River half-breeds, who, as I was informed, were induced to settle there, to escape the floods of Red River, from which they had suffered or anticipated severe losses. The village has already acquired considerable importance as a depôt for the articles of trade, which are brought by the citizens of the United States from St. Paul's.

Country about Pembina.—Character of the Prairies.—Fires in the West.

313. The country about Pembina is very fertile and beautiful. On the west the flanks of the Coteau de Missouri, before noticed, are seen about 30 miles distant, and limit the valley of the river in that direction. On the east side of the river our course lay through a beautiful level prairie dotted with willow bushes for about 19 miles in a south-east direction, when we struck the first of the "Deux Rivières;" at sunset crossed the river and camped, having travelled 22 miles. A very perceptible change in the character of the prairie was observed the next day, on approaching Pine River; the soil consisted of a light vegetable mould; and wherever rain had fallen and collected in little hollows, sand showed itself. Hummocks of aspen and willow relieved the sameness of the scenery; and a distinct rise by ridges, at the base of which the river flowed, was easily recognised. Pine River at the crossing place is about 25 broad; the current rapid. Between Pine River and Rock River the soil preserves its light character, the trail runs for many miles on ancient lake ridges or beaches which are similar in every respect to those observed between the Roseau and Fort Garry. Last night, 13th October, was cold and fine; a few grasshoppers still lingered on the prairies, and their eggs in many places lay in vast numbers on the surface of the ground. The day was beautiful and warm, and, as night approached, the sky in the north-west began to assume a ruddy tinge, and finally a lurid red, produced by the fires in the rich

prairies beyond Stony Mountains, at least 90 miles in an air line from Pine River, where we camped.

314. Wednesday, 14th. During the morning we travelled along an ancient lake ridge, doubtless a continuation of one of those which appear some miles east of the settlements on Red River. The ridge is cut by Rock and Serpent Rivers. Prairie hens were seen in great abundance, and numerous flocks of wild geese passed over head. Near Pine River we met the mail borne on the back of a half-breed, who was accompanied by a boy 15 or 16 years old carrying the blankets and cooking utensils. The mail bearer was ill, and had had no food for two days, having been longer on his journey than he expected, and without a gun to kill the prairie hens which were so abundant on the trail. He carried the mail in a large leather bag by means of a strap passing round his head. He was poorly clothed, wet, and miserable; he had been 15 days coming from Crow Wing. We gave him some buffalo meat and pemican, on the strength of which he hoped to reach Pembina in two days. Serpent River flows between steep sand banks and hills. The soil continues light, and often passing Serpent River is scarcely fitted for arable farms, but might furnish very extensive and excellent sheep pasturage. The prairies here are altogether destitute of timber, so that this day we were compelled to carry our fuel for cooking purposes from Serpent River to the middle of the plain where we camped for the night.

Red Lake River.—Mode of crossing.

315. Thursday, 15th. In the morning ice was found in the kettles, but the coolness of the night was not unpleasant. The trail ran for many miles on a perfect level and rounded Lake Ridge, and then descended into a low, rich, wet prairie, towards Red Lake River, 186 miles from Fort Garry by our estimate. Across this fine stream the baggage was passed in two small canoes, the horses swam across, and the carts were hauled with ropes. The valley of Red Lake River is heavily timbered, and will probably become an important stream as the settlement

begins to descend Red River north of Graham's Point. The valley of Red Lake River is the war path of the Sioux and Ojibways, and our half-breeds asked us not unnecessarily to fire off any guns or pistols as long as we were within ten or twelve miles of Red Lake River, that we might not attract the attention of any stray parties of Sioux who might possibly be within hearing.

Absence of Wood.—Smoke of distant Fires.

316. Friday, 16th. Passed over a high prairie, rising at long intervals in steps, and its summit marshy. The breadth of this prairie is about 23 miles, and it is terminated by Turtle Creek. No trees are visible; the soil is generally light, and the higher portions gravelly, but in the depression the soil is of the first quality. Boulders of the primary unfossiliferous rocks were observed in great numbers on the north flanks of the ancient lake ridges; met here a caravan of 9 carts containing merchandize which the owners had purchased at St. Paul; they had been 21 days coming a distance of 320 miles; their goods are enumerated elsewhere. In the afternoon we arrived at a part of the prairie, where the fire had been; as far as the eye could see, westward, the country looked brown, black, and desolate. The strong north-westerly wind, which had been blowing during the day, drove the smoke from the burning prairies beyond Red River, in the form of a massive wall towards us—a sight more marvellously grand, and at the same time desolate, could scarcely be conceived than that approaching wall of smoke over the burnt expanse of prairie stretching far away to the west. The upper edge was fringed with rose color by the rays of the sun it had just obscured; and, as it swept slowly on, the rich rose tints faded with a burnt sienna hue which gradually died away as the obscuration became more complete, until, though early in the afternoon, and with a cloudless sky towards the east, a twilight gloom began to settle around us, and the rolling folds of smoke swept over the prairie, rapidly enveloping all things in a thin but impenetrable haze; although the sun was still some degrees above the horizon, the light was that of a dim twilight.

The prairie hens flew across the trail wildly, and without, as is usual with them, any determined direction; our horses appeared to be uneasy or alarmed, and the whole scene wore an aspect of singular solemnity and gloom. Night came on suddenly, and with a darkness which might be "felt," as we reached the valley of Sand Hill River; here, trusting to the sagacity of our horses, we let them find their way to the stream, on the banks of which we encamped. During the night the horses were very restless, often galloping suddenly among the carts and tents, and at no time appearing to venture far from the camp.

317. Saturday, 17th. The wind had changed during the night, and morning brought a bright and brilliant sky, with a sharp frost; met this day a caravan of six carts, 19 days from St. Paul; they were private Red River speculators, and were laden with ploughs, whiskey, stoves, scythes, &c. Ice was observed in the ponds, and at our camp it was found about ¼ of an inch thick in the kettles which were exposed. Numerous pelicans were seen flying south, besides wild geese. The trail this day lay through a fertile rolling prairie intersected by sandy ridges; the slopes were very rich; the valleys wet. Here we saw the Height of Land Hills, about 25 miles off; arrived at Rice Creek, and camped on a hill near it.

The Height of Land.

318. Sunday 18th. Rose half an hour before day break: ice in the kettles; wind from the north, and a slight snow storm at 9 A. M. Passed Rice River, and crossed an undulating prairie about twenty miles broad, to the foot of the low range of hills constituting the height of land; vast flocks of wild geese and ducks flying southward; reached the height of land at 4, P. M., and camped three miles on the undulating plateau which forms the dividing ridge. Monday, 19th. A heavy snow storm during the night; wind strong and very cold; ice half an inch thick in the kettles, two yards from the fire; the trail continued through a very beautiful rolling plateau, with clumps of wood here and there, and lakelets between the hills. Camped at noon near

the edge of the southern slope; the wind continued cold, and running on foot, driving the horses before us, was found to be far preferable to riding on horseback. Even up the summit of the southern slope, the aspect of the country begins to change, and pretilly wooded lakes become numerous, affording in summer most delightful variety of scenery. The soil, however, is light, and not favorable for cultivation. Camped at forty-fourth Lake, about 110 miles from Crow Wing.

Tuesday, 20th. The country passed through to-day is extremely beautiful, the soil good, timber and prairie being about in equal quantities. The grackle in countless numbers were seen passing south; the lakes were alive with ducks, geese, and several other kinds of water fowl, recalling to mind the appearance of the ponds in Red River, and the Assiniboine. In the woods we met sixteen carts from St. Paul, bound to St. Joseph's, and ladened with tea, sugar, powder, and dry goods. We descended the successive steps of the southern slope rapidly, and soon reached a warmer climate; passed little Red River at noon; camped in the middle of the prairie, and heard during the night the barking of dogs, indicating our approach to settlements. The prevailing character of the soil, hitherto, is light; the country is beautiful.

319. Wednesday, 21st. A hard frost during the night; at 2 P.M. we arrived at a house, near Leaf River, called by its occupants Leaf City, and so represented on the country map; it is within a few miles of Ottertail City, on Ottertail Lake. Ottertail City contains half a dozen log houses, and is intended by its present proprietors to become a town of importance. Leaf River connects the waters which flow into Red River with those which seek the Mississippi basin, and during seasons of high water a canoe can pass from one waterlick to the other without difficulty. South of Leaf River the country becomes rolling with deep valleys and extensive swamps between the hills.—Leaf River is fringed with a magnificent forest; smoke from the west begins again to be visible.

320. Thursday, 22nd. Camped seven miles from Crow Wing River, and during the day met some French Canadian emigrants (two families) bound to Red River, from near Montreal. On the next day, after passing through a poor country, we arrived at Crow Wing River, where we found a store well stocked with goods, which the enterprising owner said he had brought there for the benefit of the Red River people; he thinks he will be able to drive a very profitable trade with them. Our road lay now through pine woods and swamps which continue for eight miles, until within twenty-five miles of Crow Wing. The communication through these swamps is wretched, but there is every prospect of the State constructing a new road next year. Reached Crow Wing at sunset, Saturday the 24th October, having been sixteen days out from Fort Garry. The subjoined table of distances affords a close approximation to each day's journey. Crow Wing is a small, new town, depending chiefly upon the pineries in its neighborhood for support, as well as upon the prospect of a road between it and Superior City. Its position in relation to Lake Superior and the valley of Red River, is thought to be very favorable, and all seem to think that a plank road from Superior City to Crow Wing, not exceeding 120 miles in length, would secure the trade of the valley of Lake Winipeg. The distance between Fort Garry and Superior City, viâ Crow Wing, is 522 miles, and from Fort Garry to Fort William, by the route of a winter road, 456.

TABLE OF ESTIMATED DISTANCES.

Fort Garry	0
Stinking River	9½
Scratching River	37½
Plum River	51
Pembina	70
First of the two rivers to the upper crossing	95
Little Bridge Creek	104
Middle River	110
Second of the two rivers	114

Pine River	136
Rock River	142
Serpent River	147
Middle of Prairie	160
Red Lake River	186
Turtle Creek	212
Sand Hill River	216
Rice Creek	242
Rice River	247
Plateau of dividing ridge	270
Buffalo Creek	279
Forty-fourth Lake	310
Little Red River	320
109th mile stone from Fort Rupley	329
Rush Lake	338
Seventy-seventh-mile Lake	361
Seven miles east of Leaf River, 62½ miles from Crow Wing	376
Twenty-four miles from Crow Wing	403
Crow Wing	428
St. Paul's	558

CHARACTER OF THE COUNTRY WEST OF THE MISSISSIPPI AND SOUTH OF THE GREAT MISSOURI ROAD.

321. Very erroneous impressions respecting available areas of cultivable land west of the Mississippi have been widely promulgated, and now find a firmly seated place in the popular mind. No fact, however, has been better established by the admirable surveys made under the auspices of the Government of the United States, than the one which limits, humanly speaking, the future westward invasion of the wilderness by the pioneers of farming industry.

322. "The progress of settlement a few miles west of the Upper Missouri River and west of the Mississippi, beyond the 98th degree of longitude, is rendered impossible by the condi-

tions of climate and soil which prevail there." "The rocky mountain region, and the sterile belt east of it, occupies an area about equal to one-third of the whole surface of the United States, which, with our present knowledge of the laws of nature, and their application to economical purposes, must ever remain of little value to the husbandman."(1) The progress of settlement must necessarily be up the valley of the Mississippi, and on and up the banks of the Missouri. The explorations for the Pacific railroad, and the meteorological investigations carried on under the direction of the Surgeon-General of the United States Army, show conclusively that no settlement of any importance can be established over a vast extent of country, many hundred miles broad, on the eastern flank of the Rocky Mountains, and south of the great bend of the Missouri. Owing to the absence of rain, the apparently great rivers, the Platte, the Canadian, the Arkansas, &c., are often converted into long detached reaches or ponds during the summer months, and forbid extensive settlements even on their immediate banks. This great and important physical fact is contrary to popular opinion, which is mainly based upon an inspection of a map, and guided by the glowing but utterly erroneous descriptions which are periodically circulated about the wonderful fertility of the far west, and its capability of sustaining a dense population.

323. The arid districts of the Upper Missouri are barren tracts, wholly uncultivable from various causes.(2) The arid plains between the Platte and Canadian Rivers are in great part sand deserts. The sage plains, or dry districts, with little vegetable growth except varieties of artemesia, begin in the western border of the plains of the eastern rocky mountain slope, and cover much the larger portion of the whole country westward.(3) The sterile region on the eastern slope of the Rocky Mountains begins about 500 or 600 miles west of the

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(1) Dr. Henry (Smithsonian Institution.)

(2) From a short paper on the Great North-West, by the Author of this Report.

(3) Page 684, Army Meteorological Register, U. S.

Mississippi, and its breadth varies from 200 to 400 miles; and it is then succeeded by the Rocky Mountain range, which, rising from an altitude of 5,200 in lat. 32°, reaches 10,000 feet in lat. 38°, and declines to 7,490 feet in lat. 42°24, and about 6,000 feet in lat. 47°. Along this range isolated peaks and ridges rise into the limits of perpetual snow, in some instances attaining an elevation of 17,000 feet. The breadth of the Rocky Mountain range varies from 500 to 900 miles. The soil of the greater part of the sterile region is necessarily so from its composition, and, were well constituted for fertility, from the absence of rain at certain seasons. The general character of extreme sterility likewise belongs to the country embraced in the mountain region.(1) The table subjoined is capable of conveying a very good idea of the great barrier to the westward progress of settlement, which lies between the Mississippi valley and the Pacific slope of the Rocky Mountains. It is extracted from a table, showing the lengths, sums of ascents and descents, &c., of the several routes surveyed for a railroad from the Mississippi to the Pacific, and published in the explorations and surveys before quoted, page 31.

324. This table shows that the least distance of uncultivable land, through which a railway from the Mississippi to the Pacific must pass in the United States territory, exceeds 1,200 miles in length, a barrier sufficient to arrest the general progress of settlement for very many years to come in a course due west of the Mississippi:

	Length of railway.	Number of miles of route through arable land.	Number of miles of route through lands generally uncultivable, arable soil being found in small areas.	No. of square miles of sums of areas of largest bodies of arable land in uncultivable regions.
	Miles.			
Route near the 47th and 49th parallel.	1864	374	1490	1000
" " 41st and 42nd "	2032	632	1400	1100
" " 38th and 39th "	2080	680	1400	1100
" " 35th "	1892	416	1476	2300
" " 32nd "	1618	408	1210	2300

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(1) Explorations and Surveys for a Railway Route from the Mississippi River to the Pacific Ocean, page 6.

325. The only direction which remains for an extensive free soil settlement, in and near the United States, is northwards, partially along the immediate banks of the Missouri, about the head waters of the Mississippi, and towards the valley of the Red River and the Saskatchewan. The popular impression that immense areas of land available for the purposes of agriculture lie between the Missouri and the Rocky Mountain chain, has, as before stated, been completely refuted by the explorations and surveys for the Pacific railroad. The now well ascertained aridity of the climate, and its natural consequence, sterility of soil, both continue to confirm the title of "The Great American Desert," given by the early explorers of the eastern flank of the Rocky Mountains to that extensive region of country. This important fact cannot fail to exercise a powerful influence upon the occupation of British territory. North of the 49th parallel of latitude, and on the sources from which that occupation will flow, a considerable part of the region lying between the Skayenne River (a tributary of Red River), and Mouse River (a distance of 150 miles), is, moreover, scarcely fitted for continuous settlement, owing to the absence of wood and the constant occurrence of brackish or salt water lakelets. In the event of the construction of the Pacific railroad near the 49th parallel, along the line surveyed by Governor Stevens, wood for building and fuel on the proposed line of road for a distance of 400 miles would have to be obtained from the only sources of supply on Red River and Mouse River (1).

326. In an article on meteorology in its connection with agriculture, by Prof. Joseph Henry, Secretary to the Smithsonian Institution, published in the Patent Office Report for 1856, the following statement relating to the states and territories bordering the Mississippi is introduced, "The time is at hand when scientific agriculture can no longer be neglected by us; for however large our domain really is, and however inexhaustible it may have been represented to be, a sober deduction from the facts which have accumulated during the last few years will

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(1) Explorations and Surveys, page 40.

show that we are nearer the confines of the healthy expansion of our agricultural operations over new ground, than those who have not paid definite attention to the subject could readily imagine. We think it will be found a wiser policy to develope more fully the agricultural resources of the states and territories bordering on the Mississippi, than to attempt the further invasion of the sterile waste that lies beyond." And again, in the same article the subjoined passage occurs: "We have stated that the entire region west of the 98th degree of west longitude, with the exception of a small portion of western Texas, and the narrow border along the Pacific, is a country of comparatively little value to the agriculturist; and perhaps it will astonish the reader if we direct his attention to the fact, that the line which passes southward from Lake Winipeg to the Gulf of Mexico will divide the whole surface of the United States into nearly two equal parts. This statement when fully appreciated will serve to dissipate some of the dreams which have been considered realities, as to the destiny of the western part of the North American Continent. Truth, however, transcends even the laudable feelings of pride of country, and in order properly to direct the policy of this great confederacy, it is necessary to be well acquainted with the theatre on which its future history is to be enacted, and by whose characters it will be mainly shaped."

327. The climate of the valley of the Saskatchewan is repeatedly referred to in the lately issued work by Lorin Blodget on the climatology of the United States and of the temperate latitudes of the North American Continent (1). This distinguished meteorologist, although advancing peculiar theoretical views in relation to the causes which determine particular climates, appears to be much impressed with the great importance of the north-western portion of this continent. The follow-

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(1) Climatology of the United States and of the temperate latitudes of the North American Continent, embracing a full comparison of these with the climatology of the temperate latitudes of Europe, Asia, &c. &c. &c.; by Lorin Blodget. Philadelphia; T. B. Lippincott & Co., 1857.

ing extracts will show the light in which the vast British possessions west of Lake Superior are regarded by this author, and the manner in which the attention of the American people is called to their importance: "Next is the area east of the Rocky Mountains, not less remarkable than the first for the absence of attention heretofore given to its intrinsic value as a productive and cultivable region, within easy reach of emigration. This is a wedge-shaped tract, ten degrees of longitude in width at its base along the 47th parallel, inclined north-westward to conform to the bend of the Rocky Mountains, and terminating not far from the 60th parallel in a narrow line which still extends along the Mackenzie for three or four degrees of latitude in a climate barely tolerable. Lord Selkirk begins his efforts at colonization here as early as 1805, and from personal knowledge he then claimed for this tract a capacity to support thirty millions of inhabitants.

328. All the grains of the cool temperate latitudes are produced abundantly. Indian corn may be grown on both branches of the Saskatchewan, and the grass of the plains is singularly abundant and rich; not only in the earliest period of exploration of these plains, but now, they are the great resort for buffalo herds, which, with the domestic herds, and the horses of the Indians and the colonists, remain on them and their woodland borders through the year. The simple fact of the presence of these vast herds of wild cattle on plains at so high a latitude is ample proof of the climatological and productive capacity of the country. Of these plains and their woodland borders the valuable surface measures fully five hundred thousand square miles."

"In various parts of the present work, references have been made to the leading incidents of natural capacity and of actual growth in the north-western districts; it is not necessary to repeat these here, and the present purpose is only to direct attention to the development in that quarter, as one offering clearly the greatest field in which natural advantages await the use of civilized nations. The reason for most of the previous and present neglect of this region lies in mistaken views of its climate, and the peculiarities of much of the Lake Superior district are such as to perpetuate the mistake. * * * * * In every condition forming the basis of national wealth, the continental mass lying westward and north-westward from Lake Superior is far more valuable than the interior in lower latitudes, of which Salt Lake and upper New Mexico are the prominent known districts."

329. The history of this north-western district has an unusual interest also, though its details are meagre. French traders ranged the fertile plains of the Red River and Saskatchewan nearly two centuries since, and the rich trade in furs and peltries has for so many years been constantly gathered from the surrounding tracts, through that as a central area. This occupation was coëval with the Spanish occupation of New Mexico and California, and but for the pernicious views entailed by the fur traffic as to the necessity of preserving it in a wilderness, it would long since have been open to colonization. The Hudson's Bay and North-west Companies had a gigantic contest for possession after the French had given way to British dominion in Canada, and both these companies at last concentrated their strength on efforts to preserve this wilderness and to crush the infant colony of Lord Selkirk. The whole space designated here, the north-west, is, however, the joint possession of the United States and Great Britain, not only in territorial title but in all the incidents of development. Its commercial and industrial capacity is gigantic, and one which it is the highest interest of both Governments to bring out at the earliest moment."

The well established facts in relation to the sterility of the far west beyond the Mississippi have a most important bearing upon Red River and the whole valley of Lake Winipeg. The northern slope of the American continent acquires a new and greatly enhanced political importance in view of the limits which nature has established to the formation of new states and territories west of the Mississippi; and no one who dispassionately considers the question of the march and progress of settlement can fail to appreciate the importance which properly belongs to the region drained by the rivers flowing into Lake Winipeg.

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APPENDIX.

No. I. (1)

PHENOMENA INDICATING THE PROGRESS OF THE SEASONS AT FORT WILLIAM, LAKE SUPERIOR, IN THE YEAR 1840.

February 29th. Thermometer at noon rose to 39° F.

March 1st. Temperature 61° in the middle of the day. On the 27th, a grey hawk, and on the 31st, a barking crow (*Corvus Americanus*) were seen.

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(1) Extracted from Sir John Richardson's Arctic Searching Expedition.

April 1. The sap of the sugar maple began to run; on the 4th small holes began to perforate the ice; on the 9th the first wild ducks of the season came; and on the 10th, butterflies, blue flies, and gulls were noticed; 20th, the general thaw commences at this period; ground frozen to the depth of three feet nine inches; 21st, *Anser Canadensis*, and *Anas boschas* and *mergansers* frequenting the neighborhood; heard a nightingale (*tendus ?*); 30th, river partially open.

May 2nd. River free of ice; bay of the lake full of drift ice; 6th, *Anser hyperboreus* passing in flocks; 8th, mosquitoes seen; 10th, the birch tree and maple budding.

June 15th. Swallows building in the outhouses; 17th, sturgeons spawning in the rapids of the river; 19th, *Catastomi* beginning to descend the river from the rapids; 21st, *Conegonus lucidus* comes to the entrance of the river in shoals.

July 3rd. The *Canagini* have left the mouth of the river; 15th, barley just coming into ear; potatoes in flower; the *Lepus Americanus* having its second litter of young; 31st, raspberries ripening.

August 8th. Red currants and blueberries (*vaccineum*) perfectly ripe; 10th, reindeer begin to rut; 19th, barley ripening; 29th, peas quite ripe; 31st, the swallows have disappeared.

September 2nd. Reindeer rutting, season ends; on the 7th the leaves of the birch and aspen change color; 10th, small trout begin to spawn; 13th, potatoes, cabbages, turnips, and cauliflowers nipped by the frost; 14th, a few ducks arriving from the north; 16th, the first stock ducks arrived from the north this autumn; 20th, small trout spawning abundantly on the shoals; 23rd, the orioles have departed for the south; 30th, *Conigonus lucidus* at this date begins to spawn in the rapids of the river.

October 8th. The large trout begin to spawn in the lake at the Shaquinah Islands—they cease on the 18th; thunder; 7th, leaves of the birch and aspen falling; 10th, the *Conigonus lucidus* has ceased spawning in the rapids; 14th, thunder; *Anser hyperboreous* arriving from the north; 15th, passing in large flocks; 20th, hail, thunder, and lightning; plovers, divers, snipes; orioles, geese and ducks in the neighborhood; on the 31st snow birds begin to arrive from the north.

November 3rd. The small lakes frozen over; on the 9th the river Kaministiquia covered by a sheet of ice, which broke up again; 21st, the spawning season of the *conegonus albus* terminates.

Dec. 1st. Ice driving about on the lake with the wind. On the 17th the bay was frozen across to the Welcome Islands.

No. 2.

BRIEF NOTICES OF THE FUR BEARING ANIMALS IN RUPERT'S LAND AND CANADA.(1)

Hudson's Bay Sable (*mustela Canadensis*).—The sable skins next in repute to the Russian, are those imported by the Hudson's Bay Company, of which no less than 120,000 are annually brought into this country; as the natural color of the skins is much lighter than the prevailing taste, it is the practice to dye many of them a darker color, and the furs thus treated are scarcely inferior to the natural sable.

Fisher.—There are about 11,000 of these skins annually brought to this country from North America; they are larger than the sables, and the fur is longer and fuller; the tail is long, round, and full, gradually tapering to a point, and quite black; a few years since it formed the common ornament to a national cap worn by the Jew merchants of Poland, and at that time was worth 6s. to 9s., but its present value does not exceed 6d. to 9d.

Mink (*mustela mison*).—There were 245,000 skins of this little animal brought to this country last year from the possessions of the Hudson's Bay Company and North America; the fur resembles the sable in color, but is considerably shorter and more glossy ; it is a very desirable and useful fur, and is exported in large quantities to the Continent.

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(1) From the Report of the Jurors: Exhibition of all Nations, 1851.

NORTH AMERICAN SKUNK (*mephitis Americana*).—The skins known under this name are imported by the Hudson's Bay Company; the animal from which they are taken is allied to the polecat of Europe, and from the fætor it emits when attacked, which has been known to affect persons with sickness at a hundred yards distance, has received the soubriquet of "*enfant du diable*;" it has a soft, black fur, with two white stripes running from the head to the tail, which is short and bushy; the skins, though imported into England, are usually re-exported to the Continent of Europe.

MUSQUASH OR MUSKRAT (*fiber zebethicus*). — The animal known under this name is found in great numbers in North America, frequenting swamps and rivers, and like the beaver building its habitations of mud with great ingenuity. Dr. Richardson states that it has three litters of young in the course of the summer, producing from three to seven at a litter. The animal has a peculiar smell similar to that of musk ; but it must not be mistaken for the animal from which the musk of commerce is procured, which is a native of Thibet. About one million skins are brought to this country annually ; the fur resembles that of the beaver, and is used by hat manufacturers ; the skins are also dyed by the furrier, and manufactured into many cheap and useful articles.

BEAVER (*castor Americanus*).—Beaver skins are imported by the Hudson's Bay Company in less quantities than formerly. The use of the fur in our hat manufactories has greatly diminished since the introduction of silk hats, and a considerable depreciation has taken place in their value. This beautiful fur is sometimes used for articles of dress. In order to prepare the skins for this appropriation the coarse hairs are removed, and the surface is very evenly cut by an ingenious machine, somewhat similar to that used in dressing cloth. The fur thus prepared has a beautiful appearance, not unlike the costly South Sea otter, and has the advantage of lightness, with durability and cheapness.

Otter (*lutra vulgaris, lutra Canadensis*). — The large supply of otter skins used by the Russians and Chinese, is derived principally from North America. The quality of the fur is in most respects similar to the otter of the British Isles, of which there are about 500 skins collected annually. This animal has frequently been tamed, and from its extreme agility in the water, has been rendered serviceable in catching fish for the use of its owner. The American otter is much larger in size than the European, being about five feet from the nose to the tip of the tail; a smaller variety abounds in the West Indies, the fur of which is very short.

Fox.—Of fox skins brought to this country there are many varieties; the black and silver foxes (*vulpes fulvus var. argentatis*) from the Arctic regions are the most valuable. Many of the skins in the exhibition are worth from 10 guineas to 40 guineas. They are purchased for the Russian market, being highly prized in that country. The cross and red foxes (*vulpes fulvus*), are used in this and other countries for ladies' dresses.

Wolverine (*gulo luscus*).—This animal, which is only met with in North America, Norway, and Sweden, is now generally considered by zoologists as identical with the glutton of old writers. It is extremely mischievous to the fur trader, and will follow the marten hunter's path round a line of traps, extending forty or fifty miles, merely to come at the baits. The fur is generally dark nut brown, passing in the depth of winter almost into black, and is chiefly used in Germany and other northern countries for cloak linings.

Bear (*ursus*).—There are several descriptions of bear skins used by the furrier. The skin of the black bear of North America (*ursus Americanus*) is used in this country for military purposes, for rugs, and carriage hammer cloths. In Russia it is frequently manufactured for sleigh coverings, and the skin of the cub bear is highly valued for trimmings and coat linings. That of the grey bear (*ursus ferox*) is applied to similar uses. That of the white Polar bear, of which the supply is very limited, is frequently made into rugs, bordered with the black and grey bear skins. The fur of the brown, or Isabella bear (*ursus Isabellinus*), has frequently been very fashionable in this country, where its value has been tenfold the present price. It is still considerably used in America for various articles of ladies dress.

The Hudson's Bay RABBIT is beautiful in the length and texture of its fur, but the skin is so fragile, and the fur so liable to fall off with slight wear, that it has little value as an article of dress. The white Polish rabbit is a breed peculiar to that country; its skin is often made into linings for ladies cloaks, and being the cheapest and most useful fur for that purpose, the animal is imported in great numbers.

RACOON (*procyon lotor*).—The racoon is an inhabitant of North America; the skins are imported into this country in immense numbers, but meeting with no demand for our home trade, are re-exported by merchants, who purchase them at the periodical sales. They are used throughout Germany and Russia for lining shubes and coats, and being of a durable nature, and moderate in price, are esteemed as one of the most useful furs.

COMMON BADGER (*meles vulgaris*).—American badger (*meles labradorica*).—The skin of the European badger, from the wiry nature of its hair, is generally used for the manufacture of superior kinds of shaving brushes, but the skins exported from North America have a soft fine fur, which renders them suitable for many for which the larger furs are used.

CANADA LYNX (*felis Canadensis*) Lynx Cat (*felis rufa*).—The fur of the lynx is long, soft, and of a grayish color, sometimes, as in the Norway lynx, covered with brown spots; the belly is white, silky, and not unfrequently spotted with black.

The change of fashion has for some time discarded it from this country, but it is dyed, prepared, and exported in considerable quantities for the American market, where it is much valued and admired. It is generally used for cloaks, linings, and facings, for which purposes it is very appropriate, being exceedingly soft and light.

No. 8.

TABLE OF THE IMPORTS AND EXPORTS (ENGLAND) OF SKINS ADAPTED FOR FURS.

	Total Importations into England.	Exported.	Consumed in England.
Racoon	525000	525000	None.
Beaver	60000	12000	48000
Chinchilla	85000	30000	55000
Bear	9500	8000	1500
Fisher	11000	11000	None.
Fox—Red	50000	50000	do
" Cross	4500	4500	do
" Silver	1000	1000	do
" White	1500	500	1000
" Grey	20000	18000	2000
Lynx	55000	50000	5000
Marten	120000	15000	105000
Mink	245000	75000	170000
Musqwash	1000000	150000	850000
Otter	17000	17500	None.
Fur Seal	15000	12500	2500
Wolf	15000	15000	None.
Marten, Stone and Brown	120000	5000	115000
Squirrel	3000000	100000	2900000
Fitch	65091	28276	36815
Kolinski	53410	200	53210
Ermine	187104	None.	187104
Rabbit	120000	do	120000
Wolverine	1200	1200	None.
Skunk	1200	1200	do
Sea Otter	100	100	do

No. 4.

CATALOGUE OF THE QUADRUPEDS OF RUPERT'S LAND.*

1.—*Shrews.*

1.	Sorex pachyrus	Baird	Thick tailed Shrew.
2.	Sorex fasteri	Rich:	Forster's Shrew.
3.	Sorex, Richardsonii	Bachm:	Richardson's Shrew.
4.	Sorex, Cooperi	Bach:	Cooper's Shrew.
5.	Sorex, palustris	Rich:	Marsh Shrew.
6.	Sorex, parvus	Say:	Least Shrew.
7.	Sorex, palustris	Rich:	Marsh Shrew.
8.	Sorex, parvus	Say:	Least Shrew.

2.—*Moles.*

9.	Scalops, Argentatus	And. S. Bach:	Silvery Mole.
10.	Condylura, Cristata	M	Star Nosed Mole.

3.—*Cats.*

11.	Lynx, rufus	Raf:	Wild Cat.
12.	Lynx, Canadensis	Raf:	Canada Lynx.

4.—*Wolves.*

13.	Canis, Occidentalis		White and Grey Wolf.
14.	Canis, Nubibus		Dusky Wolf.
15.	Canis, Latrans	Say:	Prairie Wolf.

5.—*Foxes.*

16.	Vulpus, fulvus		Red Fox.
17.	Vulpus, decussatus		Cross Fox.
18.	Vulpus, Argentatus		Silver Fox.
19.	Vulpus, Macrowrus	Baird	Prairie Fox.
20.	Vulpus, Velox	A. & Bach:	Kit Fox.
21.	Vulpus, Virginianus		Gray Fox.

6.—*Martens.*

22.	Mustela, peunautic	Erxl:	Fisher.
23.	Mustela, Americana	Tur:	Pine Martin.

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* See a Catalogue of North American Animals by S. F. Baird, Assistant Secretary of the Smithsonian Institution.

7.—*Weasels.*

24. Putorius Pusillus	A. & Bach:	Least Weasel.
25. Putorius Cicognauii		Small Brown Weasel.
26. Putorius, richardsonii	Bp:	Little ermine
27. Putorius, longicanda	Rich:	Long tailed Weasel.
28. Putorius, Sison	Rich:	Brown Mink.
29. Putorius, Nigrescent	A. & Bach:	Little Black Mink.

8.—*Wolverine.*

30. Gulo, luxus	Sab:	Wolverine.

9.—*Otter.*

31. Lubra Canadensis	Sab:	American Otter.

10.—*Skunks.*

32. Mephites Mephitica.		Common Skunk.

11.—*Badger.*

33. Taxidea, Americana	Waterh:	Missouri Badger.

12.—*Racoon.*

34. Procyon lotor	Storr:	Common Racoon.

13.—*Bears.*

35. Ursus, horibilis		Grizzly Bear.
36. Ursus, Americanus	Pallus:	Black Bear.
37. Ursus, Cumamoneus	A. & Bach:	

14.—*Possum.*

38. Didelphys Virginiana	Shaw	Possum.

15.—*Squirrels.*

39. Scuirus, Carolinensis	Gm:	Grey Squirrel.
40. Scuirus, hudsonius	Pal:	Red Squirrel.
41. Scuirus, richardsonii	Bach:	Richardson Squirrel.
42. Pteromys, volucello		Flying Squirrel.
43. Pteromys, hudsonius		Fischer, Northern Flying Squirrel.
44. Pteromys Alpinus		Rocky Mountain Squirrel.
45. Tamias Striatus		Chipmonk.
46. Tamias quadrivittatus		Missouri Striped Squirrel.
47. Spermophilus franklini		Grey Gopher.
48. Spermophilus trideum lineatus	A. & Bach:	Prairie Squirrel.
49. Spermophilus, richardsonii		Yellow Gopher.
50. Spermophilus townsendii	Bach:	Townsend's Spermophile,

Thomomy's talpoids, Male Gopher.

16.—*Dog.*

51. Cynomys ludoricianus		Prairie Dog.

17.—*Ground Hog—Marmot.*

52. Arctomys monax	Gnulin	Ground Hog.
53. Arctomys, flaviventio		Yellow footed Marmot.
54. Arctomys, prinnosus	Guie	Hoary Marmot.

19.—*Beaver.*

55. Castor Canadensis		American Beaver.

20.—*Gopher.*

56. Geomys bursarius	Rich :	Pouched Gopher.
57. Thomomys rufescens	Maxim :	Fort Union Gopher.

21.

58. Mus decemanus	Pall :	Brown Rat.
59. Mus rattus L.		Black Rat.
60. Mus musculus L.		Common Mouse.
61. Jaculus hudsonius		Jumping Mouse.
62. Hesperemys leucopus	Wag :	White footed Mouse.
63. Hesperomys myoides		Hamster Mouse.
64. Hesperomys sonoriensi	Leunte	
65. Hesperomys cucogaster		Missouri Mouse.
66. Neotoma floridana	Say :	Wood Rat.
67. Neotoma cinerea		Rocky Mountain Rat.
68. Arvicola gapperi	Vigors	Red Barked Mouse.
69. Arvicola riparia	Ord :	Bank Mouse.
70. Arvicola Austera	Leunte	Prairie Meadow Mouse.
71. Arvicola Cumamonea	Baird :	
72. Arvicola Naydenii	Baird :	
73. Arvicola borealis	Rich :	
74. Arvicola drummondii	And. & Bach :	
75. Arvicola richardsonii	Dekey	
76. Arvicola ⋈ authognathus	Leach	
77. Liber Zebethicus cur		Musk Rat.

22.—*Porcupine.*

78. Erethizon, dorsatus		White haired Porcupine.
79. Erethizon, expixanthus	Brandt :	Yellow haired Porcupine.

23.—*Hares.*

80. Lepus Americanus	Erxl :	Northern Hare.
81. Lepus campestris	Bach :	Prairie Hare.
82. Lepus sylvaticus	Bach :	Grey Rabbit.
83. Lepus artemesia	Bach :	Sage Hare.

24.

84. Alce Americanus	Jardine	American Moose.
85. Rangifer Caribou		Woodland Caribou.
86. Rangifer graenlandicus		Barren ground Caribou.
87. Cervus Canadensis	Erxl:	American Elk.
88. Cervus Virginianus	Bod:	Virginia Deer.
89. Cervus leneurus	Dougl:	White tailed Deer.
90. Cervus Macrotus	Say:	Mule Deer.
91. Antilocapea Americana	Ord:	Prong-horn Antelope.
92. Aplourus montanus	Rich:	Mountain Goat.
93. Ovis Montana	Cew	Bighorn.
94. Bos Americanus	Guellin:	American Buffalo.

No. 5.

THE BUFFALO DOMESTICATED. (1)

"The herd of buffaloes I now possess, have descended from one or two cows that I purchased from a man who brought them from the country called the Upper Missouri. I have had them for about thirty years; but from giving them away, and the occasional killing of them by mischievous persons, as well as other causes, my whole stock at this time does not exceed ten or twelve. I have sometimes confined them in separate parks, from other cattle; but generally they herd and feed with my stock of farm cattle: they graze in company with them as gently as the others. The buffalo cows, I think, go with young about the same time the common cow does, and produces once a year. None of mine ever had more than one at a birth. The approach of the sexes is similar to that of the common bull and cow—under all circumstances and at all times, when the cow is in heat, a period which seems, as with the common cow, confined to neither day nor night, nor any particular season; and the cows bring forth their young, of course, at different times and seasons of the year, the same as our domestic cattle. I do not find my buffaloes more furious or wild than the common cattle of the same age that graze with them.

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(1) Patent Office Report.

" Although the buffalo, like the domestic cow, brings forth its young at different seasons of the year, this I attribute to domestication, as it is different with all animals in a state of nature. I have always heard their time for calving in our latitude was from March until July, and it is very obviously the season which nature assigns for the increase of both races, as most of my calves were from the buffaloes and the common cows at this season. On getting possession of the tame buffaloes, I endeavored to cross them, as much as I could, with my common cows; to which experiment I found the tame, or common bull, unwilling to accede, and he was always shy of a buffalo cow; but the buffalo bull was willing to breed with the common cow.

" From the common cow I had several half-breeds, one of which was a heifer. This I put with a domestic bull, and it produced a bull-calf. This I castrated, and it made a fine steer, and, when killed, produced very fine beef. I bred from this same heifer several calves; and then, that the experiment might be perfect, I put one of them to the buffalo bull, and she brought me a bull-calf, which I raised to be a very fine, large animal—perhaps the only one to be met with in the world of this blood, viz.: a three-quarter, half-quarter, and half-quarter of common blood. After making these experiments, I have left them to propagate their blood themselves, so that I have only had a few half-breeds—and they always prove the same, even by a buffalo bull. The full blood is not as large as the imported stock, but as large as the ordinary stock of the country. The crossed, or half-blooded, are larger than either the buffalo or common cow. The hump, brisket, ribs, and tongue of the full and half-blooded are preferable to those of the common beef; but the round and other parts are much inferior. The udder, or bag, of the buffalo is smaller than that of the common cow; but I have allowed the calves of both to run with their dams upon the same pasture, and those of the buffalo were always the fattest; and old hunters have told me, that when a young buffalo calf is taken, it requires the milk of two common cows to raise it. Of this I have no doubt, having received the same information from hunters of the greatest veracity. The bag or udder of the half-breed is larger than that of the full-blooded animals, and they would, I have no doubt, make good milkers.

"The wool of the wild buffalo grows on their descendants when domesticated, but I think they have less wool than their progenitors. The domesticated buffalo still retains the grunt of the wild animal, and it is incapable of making any other noise; and they still observe the habit of having select places within their feeding grounds to wallow in.

"The buffalo has a much deeper shoulder than the tame ox, but it is lighter behind. He walks more actively than the latter, and I think has more strength than a common ox of the same weight. I have broken them to the yoke, and found them capable of making excellent oxen; and for drawing wagons, carts, or other heavily laden vehicles, on long journeys, they would, I think, be greatly preferable to the common ox. I have as yet had no opportunity of testing the longevity of the buffalo, as all mine that have died did so from accident, or were killed because they became aged. I have some cows that are nearly twenty years old, that are healthy and vigorous, and one of them has now a sucking calf. The young buffalo calf is of a sandy red, or rufus colour, and commences changing to a dark brown at about six months old, which last colour it always retains. The mixed breeds are of various colours: I have had them striped with black on a grey ground, like the zebra; some of them brindled red; some pure red, with white faces; and others red, without any markings of white. The mixed bloods have not only produced in my stock from the tame and buffalo bull, but I have seen the half-bloods re-producing, viz.: those that were the product of the common cow and wild buffalo bull. I was informed that, at the first settlement of the country, cows that were considered the best for milking, were the half-blood down to the quarter, and even eighth, of the buffalo blood. But my experiments have not satisfied me that the half buffalo bull will produce again. That the half-breed heifer will be productive from either race, as I have before stated, I have tested beyond the possibility of doubt.

“The domesticated buffalo retains the same haughty bearing that distinguishes him in his natural state. He will, however, feed or fatten on whatever suits the tame cow, and requires about the same amount of food. I have never milked either the full-blood or mixed breed, but have no doubt they might be made good milkers, although their bags or udders are less than those of the common cow; yet, from the strength of the calf, the dam must yield as much, or even more milk, than the common cow.”

No. 6.

TABLE SHOWING THE PRICES OF PROVISIONS, ETC., FOR THE CANADIAN RED RIVER EXPLORING EXPEDITION, CONTRACTED FOR BY ANDREW MCDERMOTT, ESQ., RED RIVER SETTLEMENT, 12TH SEPTEMBER, 1857.

60 cwts. flour	at 25s.	sterling.	
40 “ beef	4d.	“	per lb.
15 bags pemican	6d.	“	“
10 bales dried meat	4d.	“	“
1 keg butter	1s.	“	“
1½ chests tea, black and green	4s.	“	“
8 kegs sugar	1s. 6d.	“	“
200 lbs. lard and tallow	6d.	“	“
50 “ candles	1s.	“	“
50 bushels potatoes	1s.	“	“
50 lbs. cheese	1s.	“	“
Oak firewood	6s.	“	per load.
Poplar “	5s.	“	“
Long wood	2s. 6d.	“	“

(Signed,) ANDREW McDERMOT.

No. 7.

EXTRACT OF A LETTER FROM PEGUIS, CHIEF OF THE SAULTEAUX TRIBE AT THE RED RIVER SETTLEMENT, TO THE "ABORIGINEES PROTECTION SOCIETY," LONDON.

Many winters ago, in 1812, the lands along the Red River in the Assiniboine country, on which I and the tribe of Indians of whom I am chief, then lived, were taken possession of, without permission of myself or my tribe, by a body of white settlers. For the sake of peace, I, as the representative of my tribe, allowed them to remain on our lands on their promising that we should be well paid for them by a great chief, who was to follow them. This great chief, whom we call the silver chief, (the Earl of Selkirk), arrived in the spring, after the war between the North West and Hudson's Bay Companies (1817). He told us he wanted our land for some of his countrymen, who were very poor in their own country, and I consented on the condition that he paid well for my tribe's lands; he could have from the confluence of the Assiniboine to near Maple Sugar Point, on the Red River, (a distance of 20 or 24 miles), following the course of the river, and as far back on each side of the river as a horse could be seen under (easily distinguished). The silver chief told us he had little with which to pay us for our lands, when he made this arrangement, in consequence of the troubles with the North West Company. He, however, asked us what we most required for the present, and we told him we would be content till the following year, when he promised again to return, to take only ammunition and tobacco. The silver chief never returned, and either his son or the Hudson's Bay Company have ever since paid us annually for our lands only the small quantity of ammunition and tobacco, which, in the first instance, we took as preliminary to a final bargain about our lands. This surely was repaying me very poorly for having saved the silver chief's life, for the year he came here, Guthbert Grant, with 116 warriors, had assembled at White Horse Plain, intending to waylay him somewhere on the Red River. I no sooner heard of this than I went to Guthbert Grant, and told him if he came out of the White Horse Plain where his warriors were assembled, I should meet him at Sturgeon Creek with my entire tribe, who were then much more numerous than they are now, and stand or fall between him and the silver chief. This had the desired effect, and Mr. Grant did not make the attempt to harm the silver chief, who came as he went in peace and safety. Those who have since held our lands, not only pay us only the same small quantity of ammunition and tobacco, which was first paid to us as a preliminary to a final bargain, but they now claim all the lands between the Assiniboine and Lake Winipeg, a quantity of land nearly double of what was first asked from us. We hope our Great Mother will not allow us to be treated so unjustly as to allow our lands to be taken from us in that way.

No. 8.

Table shewing the number of Indians frequenting the following establishments of the Hon. Hudson's Bay Company in Rupert's Land and Canada, in 1856.*

Post.	Locality.	Department.	District.	Number of Indians frequenting it.
Isle à la Crosse	Rupert's Land	Northern.	English River	700
Rapid River	do	do	do	250
Green Lake	do	do	do	120
Deer's Lake	do	do	do	250
Portage la Loche	do	do	do	50
Edmonton	do	do	Saskatchewan	7500
Carlton	do	do	do	6000
Fort Pitt	do	do	do	7000
Rocky Mountain House	do	do	do	6000
Lac la Biche	do	do	do	500
Fort Assiniboine	do	do	do	150
Fort à la Corne	do	do	do	300
Cumberland House	do	do	Cumberland	350
Moose Lake	do	do	do	200
Isle Pas	do	do	do	200
Fort Pelly	do	do	Swan River	800
Fort Allice	do	do	do	500
Qu'appelle Lakes	do	do	do	250
Shoal River	do	do	do	150
Touchwood Hills	do	do	do	300
Egg Lake	do	do	do	200
Fort Garry	do	do	Red River	7000 including Whites and Half-breeds.
Lower Fort Garry	do	do	do	
White Horse Plain	do	do	do	
Pembina	do	do	do	1000 ditto.
Manitoba	do	do	do	200 ditto.
Reed Lake	do	do	do	50
Fort Francis	do	do	Lac la Pluie	1500
Fort Alexander	do	do	do	300
Rat Portage	do	do	do	500
White Dog	do	do	do	100
Lac de Bonnet	do	do	do	50
Lac de Bois Blanc	do	do	do	200
Shoal Lake	do	do	do	200
Norway House	do	do	Norway House	500
Beren's River	do	do	do	183
Nelson's River	do	do	do	400
York Factory	do	do	York	300
Churchhill	do	do	do	400
Severn	do	do	do	250
Trout Lake	do	do	do	250
Oxford House	do	do	do	300
Albany Factory	do	Southern.	Albany	400
Marten's Falls	do	do	do	200
Osnaburg	do	do	do	200
Lac Seul	do	do	do	300
Matawagaminque	do	do	Kinoquinisse	250
Kuckatoosh	do	do	do	150
Michipicoten	Canada	do	Lake Superior	300
Batchewana	do	do	do	100
Mamainse	do	do	do	50
Pic	do	do	do	100
Long Lake	Rupert's Land	do	do	80
Lake Nepigeon	Canada	do	do	250
Fort William	do	do	do	350
Pigeon River	do	do	do	50

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* From the Parliamentary Report of the Hudson's Bay Company (London.)

TABLE shewing the number of Indians frequenting the following establishments of the Hon. Hudson's Bay Company, &c.—(*Continued.*

Post.	Locality.	Department.	District.	Number of Indians frequenting it.
Lac d'Orignal	Canada	Southern.	Lake Superior	50
Lacloche	do	do	Lake Huron	150
Little Current	do	do	do	500
Green Lake	do	do	do	150
Whitefish Lake	do	do	do	150
Sault Ste. Marie	do	do	Sault Ste. Marie	150
Moose Factory	do	do	Moose	180
Hannah Bay	do	do	do	50
Abitibi	do	do	do	350
New Brunswick	do	do	do	150.
Great Whale River	do	do	Eastmain	200
Little Whale River	do	do	do	200
Fort George	do	do	do.	200
Rupert's House	do	do	Rupert's River	250
Mistasimy	do	do	do	200
Temiskamay	do	do	do	75
Woswonaby	do	do	do	150
Mechiskan	do	do	do	75
Pike Lake	do	do	do	80
Nitchequon	do	do	do	80
Kaniapiscow	do	do	do	75
Temiscamingue House ...	do	do	Temiscamingue.	400
Grand Lac	do	do	do	200
Kakabeagino	Rupert's Land	do	do	100
Lake Nepissing	Canada	do	do	130
Hunter's Lodge	do	do	do	100
Temagaminque	do	do	do	100
Lac des Allumettes	do	Montreal.	Fort Coulonge	200
Joachim	do	do	do	75
Matawa	do	do	do	100
Buckingham	do	do	Lac des Sables	50
Rivière Desert	do	do	do	100
Lachine House	do	do	Lachine	Whites.
Three Rivers	do	do	St. Maurice	Whites.
Weymontachinque	do	do	do	150
Kikandatch	do	do	do	130
Tadousac	do	do	King's Posts	100
Chicoutimi	do	do	do	100
Lake St. John's	do	do	do	250
Isle Jeromée	do	do	do	250
Godbout	do	do	do	100
Seven Islands	do	do	do	300
Mingan	do	do	Mingan	500
Musquarro	do	do	do	100
Natashquan	do	do	do	100
Fort Nascopie	Rupert's Land	do	Esquimaux Bay	200

No. 9.

COPY OF A LETTER FROM THE RIGHT REVEREND THE LORD BISHOP OF RUPERT'S LAND.

BISHOP'S COURT,
Red River, 7th January, 1858.

My dear Sir,—I am almost afraid any intelligence which I now communicate will be too late to be embodied in your Report for the Canadian Government. Your letter from St. Paul's, of 29th October, only reached me by the December mail and this is my first opportunity of replying to it. It is unfortunate, as it has happened that the queries had not been left behind when you visited the Red River, so that I might have answered them immediately on my return. In the hope, however, that the information may be of use, although too late for your official report, I now send a short reply to each of the questions submitted to me.

1. We may perhaps take the limits of the settlement as extending from Portage La Prairie to the Indian settlement. Within these boundaries the schools connected with the Church of England are thirteen. They are necessarily more numerous than would under any other circumstances be required by the population from the houses of the settlers lying along the banks of the two rivers, and not being in the form of a town or village, the children cannot go to school above a certain distance, and the schools have been in consequence multiplied to suit the convenience of the inhabitants. The thirteen are exclusive of the two higher academies for young ladies and for boys.

2. The subjects taught must vary considerably from the great difference of capacity in the pupils. The two leading schools would be "St. John's Parochial School," in the upper part of the settlement, and the "Model Training School," connected with St. Andrew's Church. In the former, in addition to the usual branches, the upper pupils have the opportunity of studying Latin, French, and mathematics. In the Model School,

which is taught by a certificated master from Highbury, the senior pupils have also the advantage of instruction in Latin, Euclid, and Algebra. They are thus an approach to the Grammar Schools in Canada. In the other schools, of which St. Paul's is the best example, there is an excellent education afforded in British history, grammar, geography, arithmetic, with the elements of general history. Of course we must be content with much less where the pupils are the children of Indian parents. With them it is difficult to go beyond reading, writing, and arithmetic.

In the Collegiate School many of the pupils make very great progress both in classics and mathematics. Soon after my arrival in the country I was induced to found some scholarships as an incentive to study, and an approximation to what takes place in other countries. To the scholars elected from year to year, was assigned a free board, and the sum of £10 a year, or in all about £30 per annum. Of these so elected, some have done well elsewhere, and reflected credit on their early training. I would only specify among these Mr. Colin C. McKenzie, B. A. of St. Peter's College, Cambridge; Mr. Jas. Ross, B. A., who has distinguished himself very highly at the University of Toronto. The Rev. Peter Jacobs, ordained by the Bishop of Toronto, to labor among the Indians on Lake Huron, and the Rev. Robert McDonald, ordained by myself, to the Missionary Station of Islington, on the Winipeg River. With more advanced pupils the higher classics have been read, such as Eschylus, Herodotus, and Thucydides. The turn of the native mind is, however, more towards mathematics. All attain to excellence in Algebra, and acquire it with great ease. All, too, have nationally imitative power, and write and draw well. While I have had great pleasure in carrying on these branches of education, my one feeling of disappointment has been that there is comparatively little opening for those who distinguish themselves in this country in after life. Yet I have felt that the duty is ours; the event was with God. In the young ladies' school the want of adequate motive to excite to study is felt more than in the Collegiate School. They have the opportunity of learning every branch usually taught in such establishments elsewhere, such as French and music, and there is a very great change perceptible in the seven years. Their education is all-important with a view to the training of the next generation, and although the progress may not be visible in their case the effects will I trust be fully acknowledged when they are settled in life.

3. In the thirteen schools there may be about six hundred, from that to seven hundred. In one or two there may be above fifty in attendance in winter, but the average will not exceed forty. The students at the Collegiate School have been as many as twenty-four, but as the standard of education rises in the Parochial Schools, the Collegiate School, as such, will be comparatively unnecessary and it will ultimately be limited to those who may be under preparation for Holy Orders. For such, and for the clergy generally, there is a library, possessing now one thousand books of standard divinity, as well as other useful subjects.

4. The sources of income vary much; ten out of the thirteen schools are connected with the Church Missionary Society. The masters of such schools have all a salary from the society. The model training master is entirely paid by them, and also the masters of the pure Indian schools. In the other schools about one-half may be paid by the society, sometimes less, and the rest made up by the parents of the children. In the three parochial schools, unconnected with the Church Missionary Society in St. John's Parochial School, a portion of the salary is paid by my own college, Exeter College, Oxford. In St. James' by some christian friends in Edinburgh, and at Headingly by the congregation of the Rev. T. M. McDonald, Trinity Church, Nottingham.

5. This question is included in the preceding. I only add that the sum paid by parents is 15s. a year; where Latin is taught, £1. In some parishes they prefer to pay the pound, or thirty shillings a family, and to send as many as they choose for the sum.

6. We want much, school apparatus, books, and maps. A very large quantity of books have been imported, and the society for the propagation of Christian knowledge has given many valuable sets of maps to several parishes, but scattered over thirteen schools, they are still insufficient. Could we have a grant at half price of books, grammars, geographies, arithmetic books, and also some maps from Toronto or any other quarter of Canada, we shall be glad to pay for their carriage to St. Paul's, from which place they would be brought hither by our own people. I saw with much pleasure, I must not say with envy, the stock at the Normal school; if judged to be within the limits of a grant, and the Educational Board will allow us to purchase at half price, I hope you will give me immediate notice of this, so as not to lose the present summer.

7. Here, too, apparatus and machinery are requisite. I ordered myself, last year, four ploughs, and these I intend for new stations and settlements, to be used by the Indians in common; now we want a large number of them to bring additional land under cultivation. After all our grand want is division of labor. We have no separate trade, all are engaged in everything, farmers and carpenters at the same time, and so on. At a meeting held two years ago, for the promotion of social improvement, I endeavoured to press this upon them, but they are slow in understanding the "philosophy of improvement." We want one skilful in tanning, for the hides of the domestic animals are wasted at present. We want one to instruct them in making soap, to save the importation of this bulky and necessary article from Britain. We want, too, improvement in the fulling of cloth to bring the wool into use, and provide clothing cheaper than what is imported. We have country cloth now, but the fabric is imperfectly fulled, and therefore not sufficiently warm. Young men coming among us, who could guide and instruct the people in any of these branches, would be a great gain.

8. My own opinion is much in favor of Red River as a place for settlement. From Britain the difficulty is to get out, but once out the industrious need not want for aught. As compared with

the position of the farm-laborers in England, their condition here is infinitely superior. I speak from actual knowledge of those who have come out from the counties of Kent, Cambridge, and Rutland. If the British Government could send out some free of expense every year, they might be settled advantageously, and become useful additions to our population. We want producers at this time in greater number, and not consumers. As compared with Canada, as far as by other but limited goes, our advantage is in the ease with which prairie land is brought under. The clearance in Canada seemed to me to be effected with difficulty; here it is easy, and in a very few years the farm can be in good order.

On the ground of education, let none fear to make trial of the country. The parochial school connected with my own church, is equal to most parochial schools which I have known in England, in range of subjects, superior to most, though in method and in the apparatus of the school necessarily a little inferior.

I look forward with much hope to the effect of the new road which your Commissioners are opening from Red River to the Lake of the Woods. It is thought to be about 96 or 100 miles in length. I should much like that we should have a station on the lake. If I could find some of our young men willing to go out and take up land there, I should be willing to promise them a clergyman, a church and school, and it would soon grow into a town. If you could at the same time plant some Canada settlers at Fort William, or at some other spot on the northern shore of Lake Superior, the communication would virtually be opened. Until this is done, all the traffic will be through the United States, *viâ* St. Paul's.

I shall hope to have a few lines from you acknowledging the receipt of this letter, and if you can persuade the Educational Department to admit us, as a special and peculiar case, as purchasers of books and apparatus on the same terms as their own schools, or on some modification of the terms, it would tend, I am sure, to cement that union between the two countries which is now, in the providence of God, advancing slowly but securely from year to year.

Any other detail connected with the land I shall be happy to give at any time. Would you have the goodness to give my kind and christian regards to the Provost, and with every good wish,

Believe me ever, my dear Professor Hind,
Yours sincerely and faithfully,
(Signed,) David Rupert's Land.

Professor H. Y. Hind,
Trinity College.

No. 10.

COPY OF A LETTER FROM THE REV. JOHN BLACK, PRESBYTERIAN MINISTER, RED RIVER.

The Manse, Red River,
January 6th, 1858.

My Dear Sir,—I am sorry that your note, dated St. Paul's, October 29th, did not come to hand till December, I think the 17th, and consequently I have not had an opportunity of answering it till now; I am afraid therefore it will be too late for your purposes. I willingly, however, comply with your request: the labor is not great if it is lost. First, then, as to the school: This is entirely supported by the people of the district, or rather by those of them who send their children to it. There is no endowment, no public money, nor any allowance by any Missionary or other Society. The salaries of the different teachers have varied from £22 to £40 sterling a year. The branches taught are English reading, writing and grammar, geography, arithmetic, and the elements of algebra and geometry. In the last two branches I think there are no pupils at present. The average attendance will be from thirty-five to forty. The school is kept open for the whole year, excepting a month in harvest, and the usual holidays. The school is not exclusively composed of the children of Presbyterian families, neither do all the children of such families attend it; some of these, residing at the extremities of the parish, attend the Church of England schools at the upper and middle churches, whilst some of the Church of England people who reside amongst us send their children here. You are aware that we have no public school system in this colony, and this, like the rest, is therefore essentially a denominational school. We would like to raise its character, but owing to other burdens lying upon them, and to their being left without assistance, the people are not able to hold out sufficient inducement in the way of salary to secure the services of an able teacher, at least permanently. Will annexation give us the Canada school system? As to church matters, we have here two congregations, or rather a congregation and a mission station belonging to this congregation. In the one where I live there are about sixty families; to the other (situated at Mr. Gunn's, New Stone Fort) there are ten or eleven in all. There are somewhat upwards of 120 members in full communion. The people are mostly Scotch, or of Scotch parentage. There are a few Orkney men, whom our Highlanders scarcely recognize as Scotch, a few half-breeds, one Englishman, and one Swiss. We have sabbath schools at both places: here the attendance may just now average eighty-five; below about thirty. Here we have divine Service every sabbath forenoon, and in the afternoon alternately here and below. We have also week lectures on Thursdays, and prayer meetings on Tuesday evenings. In regard to temporalities, the congregation below have no property but their small meeting house; that here has about 300 acres of good land, a stone church which cost about £1,000, and the cottage in which I live. My stipend is £150 sterling a year, £100 of which is raised by voluntary contributions, and £50 is allowed me by the Hudson's Bay Company. My people are mostly all farmers in comfortable circumstances, but none rich. They are, however, allowed to be the most steady and industrious portion of our population. As to suggestions of an industrial kind, I am not a very competent person to make such. There is one thing, however, which I did think of great consequence, especially in view of an increased population, and that is to afford facilities for domestic manufactures. The climate requires large quantities of heavy woollen goods, and these might just as well be manufactured here as imported from England. You saw what a splendid country it is for sheep pasture, and were there means of making wool into cloths, blankets, &c., greater attention would be given to the rearing of sheep; great quantities of such goods are also required for the fur trade, and it would be an advantage to have them manufactured here. Among the emigrants coming up to take possession of the land, it would be a great advantage were there somebody to establish machinery for carding, fulling and dyeing, perhaps spinning and weaving also.

I do not know that my letter will be of any use to you, but I am glad, and ever will be so, to meet your wishes in anything that I can.

With much respect, yours,
JOHN BLACK.

Professor H. Y. Hind.

LIST OF PORTAGES ON THE PIGEON RIVER ROUTE, FROM THE MAP OF THE BOUNDARY COMMISSIONERS.

	Portages.	Yards.
1	Grand Portage	14,366
2	Partridge "	445
3	Fowl "	2,000
4	Moose "	721
5	Great Cherry "	844
6	Mud "	265
7	Lesser Cherry "	233
8	Watap "	539
9	Great New "	2,578
	Arrow Lake.	
10	Dividing Ridge	468
11	Little Rock Portage	33
12	Mill Fall Portage	110
13th	Portage	119
14th	"	20
15	Swamp Portage	423
16th	Portage	47
17th	"	583
18th	"	173
19	Carp Portage	275
20	Birch Lake Portage	196
21	Wood Lake	190
22	Fir Portage	350
23rd	Portage	33
24th	Portage	166
25	Curtain Fall Portage	183
26	Bottle Portage	448
27	Negawqua Lake Portage	217
28	Coon's Narrows—1st Portage	67
29	" 2nd "	263
	Nameaukan Lake.	

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